RESEARCHES

CONCERNING THE

LAWS, THEOLOGY, LEARNING, COMMERCE, ETC.

OF

Ancient and Modern India.

BY Q. CRAUFURD, ESQ.

IN TWO VOLUMES.

VOL. II.

London:

PRINTED FOR T. CADELL AND W. DAVIES, STRAND.

1817.

J. M'Creery, Printer,
Black-Horse-Court, London.

CONTENTS OF VOL. II.

APPENDIX

OF

NOTES AND ILLUSTRATIONS.

*** *In reading the Names of Persons and Places, the Vowels are understood to be pronounced as in the Italian Language.*

RESEARCHES

CONCERNING THE

LAWS, THEOLOGY, LEARNING, COMMERCE, ETC.

OF

Ancient and Modern India.

BY Q. CRAUFURD, ESQ.

IN TWO VOLUMES.

VOL. II.

London:

PRINTED FOR T. CADELL AND W. DAVIES, STRAND.

1817.

J. M'Creery, Printer,
Black-Horse-Court, London.

CONTENTS OF VOL. II.

APPENDIX

OF

NOTES AND ILLUSTRATIONS.

*** *In reading the Names of Persons and Places, the Vowels are understood to be pronounced as in the Italian Language.*

RESEARCHES

ON

Ancient and Modern India.

CHAPTER VIII.

ON THE ASTRONOMY AND OTHER SCIENCES OF THE HINDŪS.

THOUGH an accurate inquiry into the Astronomy of the Hindūs, can only be made by such as may have particularly studied that science; we hope, nevertheless, to be excused for offering a few observations on the subject, founded on the opinions of those, whose knowledge in astronomy have obtained for them the high reputation they enjoy in the learned world.

The late Monsieur Bailly, in his *Traité de l'Astronomie Indienne et Orientale,* men-

tions four sets of tables, brought to Europe at different times, from distinct places, and by different persons: one from Siam, by M. de la Loubiere, who was sent thither as ambassador, by Louis the 14th; two that were found by M. Bailly in the *Depôt de la Marine*, at Paris, which had been placed there by M. de Lisle,* who had received them from the Fathers Patouillet and Duchamp, correspondents of the missionaries in India; and a fourth, which was brought from the coast of Coromandel, by M. le Gentil, and which he had procured from Brahmins at Tirvalore.†—These four sets of tables and precepts of astronomy, procured, as has been observed, at different times, and distinct places, some of them extremely distant from the others, M. Bailly says, all, evidently, came from the same original;

* Joseph Nicolas de Lisle, a celebrated astronomer, the friend of Newton and Halley. He was born at Paris in 1688, and died there in 1768.

† A town in N. L. 10° 44′ near to Negapatnam, on the coast of Coromandel.

all have the same motion of the sun, the same duration of the year; and all are adapted to a meridian passing near to Benares:* for instance, the tables brought

---

* Yet the first meridian of the ancient Hindū astronomers, it is said, was that of Oujein, then called Ujjaini, and sometimes Avanti, in N. L. 23° 11′ 13″, and E. Long. from Greenwich, 75° 51′.—The present city is about a mile distant from the site of the ancient town, which above 1800 years ago was buried in the earth, by some extraordinary natural convulsion. Avanti, or Ujjaini, was the magnificent capital of the celebrated Viccramaditya, and one of the principal seats of arts and learning. The traditionary legend of the place imputes its destruction to a *shower of earth from heaven*; and Mr. Hunter, who seems to have carefully examined the spot, observes, that no volcanic conical hills, or traces of volcanic scoriæ are to be found in the neighbourhood of it. It has been suggested that its destruction may have been occasioned by an inundation of the river Sipara, which now washes the southern extremity of the present town. Tradition relates that, at the time of the destruction of the ancient city, this river changed its course; and while Mr. Hunter and his companions were at Oujein, a part of the town, though situated considerably above the level of the river, was overflowed by it: but he nevertheless thinks an earthquake the most probable cause of the destruction of the ancient city, and that the

from Siam, suppose a reduction of one hour and thirteen minutes of time, or eighteen degrees and fifteen minutes of longitude, as so much west from the part of Siam, to which these tables had been adjusted.

The beginning of the Kaly-Yug, or present age of Hindū chronology, adjusted to our computation of time, is reckoned at two hours, twenty-seven minutes, and thirty seconds of the morning of the 16th of February, 3102 years before the Christian

---

change in the course of the river, admitting the tradition in that respect to be true, must have been the effect of that convulsion. By digging about eighteen feet deep, on the spot where the ancient city stood, walls of buildings are found entire, columns, utensils of various kinds, and ancient coins. Mr. Hunter saw a space of from twelve to fifteen feet long and eight high, filled with earthen vessels. Bricks taken from these ruins, continue to be employed in building; some are of a much larger size than those made in modern times.—The present city is of an oblong form, about six miles in circumference, surrounded by walls of stone, intersected by towers.—*See Narrative of a Journey from Agra to Oujein, by William Hunter, Esq. Asiat. Res.* vol. vi. p. 7.

æra; but the time from which most of their astronomical tables now existing are constructed, is two days, three hours, thirty-two minutes, and thirty seconds, after that, or the 18th of February, about six in the morning.* They say, that there was then a conjunction of the planets. M. Bailly observes, that it appears, Jupiter and Mercury were then in the same degree of the ecliptic; that Mars was distant about eight degrees, and Saturn seventeen; hence it results, that at the time of the date given by the Brahmins to the commencement of the Kaly-Yug, they might have seen those four planets successively disengage themselves from the rays of the sun; first Saturn, then Mars, then Jupiter, and then Mercury; and though Venus could not have appeared, yet as they only speak in general terms, it was natural enough to say, *there was then a conjunction of the planets:* but M. Bailly is of opinion, that their astronomical

* See Traité de l'Astronomie Indienne et Orientale, par Bailly, Discours Préliminaire, pp. xxvii, xxviii.

time is dated from an eclipse of the moon, which appears to have happened then, and that the conjunction of the planets is only incidentally mentioned. We are told by some writers, that the circumstance which marked that epoch, was the death of their hero Krishen; who, as we have already observed, was supposed to be the god Vishnu in one of his incarnations; by others, that it was the death of a famous and beloved sovereign, named Yudhishthira; but, whichever of the two it may be, the Hindūs considering the event as a great calamity, distinguished it by beginning a new age, and expressed their feelings by naming it the Kaly-Yug, *the age of unhappiness or misfortune.*

From the tables brought home by M. de la Loubiere, in 1687, it appears that the Indians knew some particulars in the science of astronomy, which were at that time unknown in Europe. Certain motions of the moon contained in them, and which essentially serve to explain her movements, had indeed, been discovered by Tycho Brahe,

who was born in 1546, and died in 1601: but it cannot be supposed that what had been discovered by Brahe, could have been transmitted to Benares, there introduced into the tables, and from thence brought to Siam, during the time that elapsed between the discovery in Europe and the date when M. de la Loubiere procured those tables. Whoever may be acquainted with the state and nature of the communications at that time between India and Europe, and between the interior parts of Hindūstan and Siam, together with the depressed state of the Hindūs under their Mohammedan rulers, and their neglect of science and learning since the conquest of their country by strangers, will instantly reject such an idea. If, therefore, it appear that the Hindūs had a knowledge of certain things in astronomy earlier than the Europeans, that they knew and practised what the Alexandrian and Arabian schools were ignorant of,* it may be asked

* Bailly, Professor Playfair, &c. &c.

from what source did they derive their knowledge of them. We can assign no other but that of their own discoveries and observations.

It has been said that the Indian and Arabian divisions of the zodiac were the same. It may very possibly be so: and many who have considered the subject and admit this, are disposed to think, that the Arabians took their divisions from the Hindūs. The learned orientalist, Mr. Colebrooke, who has examined the subject, finds, however, that in some respects they differ from each other; but he is nevertheless of opinion that they must have had one common origin. He says:—"The coincidence appears to me too exact, in most instances, to be the effect of chance: in others, the differences are only such, as to authorize the remark, that the nation, which borrowed from the other, has not copied with servility. I apprehend that it must have been the Arabs who adopted (with slight variations) a division of the zodiac familiar to the Hindūs. This, at

least, seems to be more probable than the supposition, that the Indians received their system from the Arabians: we know, that the Hindūs have preserved the memory of a former situation of the Colures, compared to constellations, which mark divisions of their zodiac in their astronomy; but no similar trace remains of the use of the lunar mansions, as divisions of the zodiac, among the Arabs, in so very remote times."*

And again, some pages after, he observes:—"The result of the comparison shews, I hope satisfactorily, that the Indian asterisms, which mark the divisions of the ecliptic, generally consist of nearly the same stars, which constitute the lunar mansions of the Arabians: but, in a few instances, they essentially differ. The Hindūs have likewise adopted the division of the ecliptic and zodiac into twelve signs, or constellations, agreeing in figure and designation with those of the Greeks; and differing

* Asiat. Res. 8vo. vol. ix. p. 324.

merely in the place of the constellations, which are carried, on the Indian sphere, a few degrees further west than on the Grecian. That the Hindūs took the hint of this mode of dividing the ecliptic from the Greeks, is not perhaps altogether improbable: but, if such be the origin of it, they have not implicitly received the arrangement suggested to them, but have reconciled and adapted it to their own ancient distribution of the ecliptic into twenty-seven parts."

"In like manner, they may have either received or given the hint of an armillary sphere as an instrument for astronomical observation; but certainly they have not copied the instrument which was described by Ptolemy; for the construction differs considerably."

"Astrologers also reckon twenty-eight *yogas*, which correspond to the twenty-eight *Nacshatras*, or divisions of the moon's path; varying, however, according to the day of the week. As the Indian almanacks some-

times appropriate a column to the moon's *yoga* for each day, I shall insert in a note a list of these *yogas*, with the rule by which they are determined."

" Another topic, relative to the zodiac, and connected with astrology, remains to be noticed. I allude to the *Dreshcanas* answering to the Decani of European astrologers. The Hindūs, like the Egyptians and Babylonians, from whom that vain science passed to the Greeks and Romans, divide each sign into three parts, and allot to every such part a regent, exercising planetary influence under the particular planet whom he there represents. The description of the thirty-six Dreshcanas, is given towards the close of Varahamihira's treatise on the casting of nativities, entitled Vrihat Jataca."

But, supposing the Indian astronomy to be indigenous, it is nevertheless possible, that the Greeks, in the course of practice, may in certain things have made improvements, which, having been communicated to the Indians, were adopted by them;

though (as Mr. Colebrooke has observed) not implicitly, but reconciling them with what they anciently practised.

Each of the twelve parts, or signs of the Indian zodiac, has its particular name. Each sign contains thirty degrees; but the Hindūs also divide the twelve signs into twenty-seven parts,* which they call *constellations, or places of the moon, reckoned in the twelve signs;* every sign is equal to two constellations and a quarter, each constellation consists of thirteen degrees, twenty minutes, and has its particular name.

"This division of the zodiac is extremely natural in the infancy of astronomical observation, because the moon completes her circle among the fixed stars nearly in twenty-seven days, and so makes an actual division of that circle into twenty-seven equal parts.

"These constellations are far from in-

---

* See Voyages dans les Mers de l'Inde, par M. le Gentil. Astronomie Indienne et Orientale, par M. Bailly;—and La Croze, vol. ii. liv. 6.

cluding all the stars in the zodiac. M. le Gentil observes, that those stars seem to have been selected, which are best adapted for making out, by lines drawn between them, the places of the moon in her progress through the heavens."*

The date given to the tables brought from Tirvalore, coincides with the famous æra of the Kaly-Yug, that is, with the beginning of the year 3102 before Christ, according to our reckoning: "when the Brahmins there would calculate the place of the sun for a given time, they begin by reducing into days the intervals between that time and the commencement of the Kaly-Yug, multiplying the years by 365 days, 6 hours, 12′ 30″, and taking away 2 days, 3 hours, 32′ 30″, the astronomical epoch having begun that much later than the civil."†

Monsieur Bailly, treating of the Hindū Tables, makes the following observations: —"Le mouvement Indien dans ce long

* See Trans. of the R. S. of Edinburgh, vol. ii. p. 140, article by Professor Playfair.

† See Trans of the R. S. of Edinburgh, vol. ii.

intervalle de 4383 ans, ne diffère pas d'une minute de celui de Cassini; il est également conforme à celui des tables de Mayer. Ainsi deux peuples, les Indiens et les Européens, placés aux deux extrémités du monde, et par des institutions peut-être aussi éloignées dans le tems, ont obtenu précisément les mêmes résultats, quant au mouvement de la lune, et une conformité qui ne seroit pas concevable, si elle n'étoit pas fondée sur l'observation, et sur une imitation réciproque de la nature. Remarquons que les quatre tables des Indiens sont toutes les copies d'une même astronomie. On ne peut nier que les tables de Siam, n'existassent en 1687, dans le tems que M. de la Loubiere les rapporta de Siam. A cette époque les tables de Cassini et de Mayer n'existoient pas; les Indiens avoient déjà le mouvement exact que renferment ces tables, et nous ne l'avions pas encore.* Il faut donc convenir que l'ex-

* "Ceci répond aux savans qui pourroient soupçonner que notre astronomie a été portée dans l'Inde, et com-

actitude de ce mouvement Indien est le

---

muniquée aux Indiens par nos missionaires. 1°. L'astronomie Indienne a des formes qui lui sont propres, des formes qui caractérisent l'originalité ; si c'étoit notre astronomie que l'on eût traduite, il auroit fallu beaucoup d'art et de science pour déguiser ainsi le larçin. 2°. En adoptant le moyen mouvement de la lune, on auroit adopté également l'obliquité de l'écliptique, l'équation du centre du soleil, la durée de l'année; ces élémens différent absolument des notres, ils sont singulièrement exacts lorsqu'ils appartiennent à l'époque de l'an 3102; ils seroient très erronés s'ils avoient été établis dans le siècle dernier. 3°. Enfin nos missionaires n'ont pu communiquer aux Indiens en 1687 le moyen mouvement de la lune des tables de Cassini, qui n'existoient pas alors, ils ne pouvoient connoître que les moyens mouvemens de Tycho, de Riccioli, de Copernic, de Bouillaud, Kepler, Longomontanus, ou ceux des Tables d'Alphonse. Je vais présenter ici le tableau de ces moyens mouvemens pour 4383 ans et 94 jours.

Tables.	Moy. mouv.	Difference avec les Indiens.	
D'Alphonse	9ˢ 7° 2′ 47″	—	0 42′ 14″
Copernic	9ˢ 6° 2′ 13″	—	1° 42′ 48″
Tycho.	9ˢ 7° 54′ 40″	+	0 9′ 39″
Kepler	9ˢ 6° 57′ 35″	—	0 47′ 26″
Longomontanus . .	9ˢ 7° 2′ 13″	—	0 42′ 48″
Bouillaud	9ˢ 6° 48′ 8″	—	0 58′ 53″
Riccioli	9ˢ 7° 53′ 57″	+	0 8′ 56″
Cassini	9ˢ 7° 44′ 11″	—	0 0 50″
Indiens	9ˢ 7° 45′ 1″		

" On

fruit de l'observation. Il est exact dans cette durée de 4383 ans, parcequ'il a été pris sur le ciel même; et si l'observation en a déterminé la fin, elle en a marqué également le commencement. C'est le plus long intervalle qui ait été observé, et dont le souvenir se soit conservé dans les fastes de l'astronomie. Il a son origine dans l'époque de 3102 ans avant J. C. et il est une preuve démonstrative de la réalité de cette époque."*

By some, who are inclined to dispute the authenticity of the date, it has been said that, supposing the places and motions of the heavenly bodies to have been the same,

---

"On voit qu'aucun de ces moyens mouvemens, celui de Cassini excepté, ne s'accorde avec le mouvement donné par les Indiens. On n'a donc point emprunté ces moyens mouvemens. Il n'y a de conformité qu'avec le mouvement de Cassini, dont les tables n'existoient pas en 1687. Ce mouvement de la lune appartient donc aux Indiens, et ils n'ont pu l'obtenir que de l'observation." *Bailly*, *Astron. Ind. Discours Préliminaire*, pp. xxxvi, xxxvii, note.

* Ibid, p. xxxvi.

3102 years before our æra, as they are at present, the Indians, by calculations made at a much later period, might have discovered, that the conjunction of planets and eclipse of the moon mentioned by them, could have been then observed at Benares: but to be able to do so, implies a more accurate practice in astronomy than the Hindūs seem to possess; for it is evident that their knowledge in science and learning, instead of being improved, has greatly declined from what it appears to have been in the remote ages of their history. And besides, for what purpose should they take such pains?—It may possibly be answered, from the vanity of wishing to prove the superior antiquity of their learning to that of other nations. We confess that the observation, unsupported by other proofs, appears to us unworthy of men of learning, whom we should expect to find resting their arguments on scientific proofs only.

In the Siamese tables, "the motions of the moon are deduced by certain intercalations, from a period of nineteen years, in

which she makes nearly 235 revolutions; and it is curious to find at Siam, the knowledge of that cycle, of which the invention was thought to do so much honour to the Athenian astronomer Meton, and which makes so great a figure in our modern kalendars."*

"Cette règle suppose donc, une période de 19 années, semblable à celle de Meton et du nombre d'or; et Dom. Cassini ajoute, que la période Indienne est plus exacte que le cycle ancien du nombre d'or."†

It is evident that the Hindūs must have known the use of the gnomon at a very remote period. Their religion commands that the four sides of their temples should correspond with the four cardinal points of the heavens; and they are all so constructed.

The rules by which the phœnomena of eclipses are deduced from the places of the

* Playfair, in Trans. of the Royal Society of Edinburgh, vol. ii. p. 144.

† Astronomie Indienne et Orientale, p. 4, 5.

sun and moon, have the most immediate reference to geometry; and of these rules, as found among the Brahmins at Tirvalore, M. le Gentil has given a full account. We have also an account by Father Du Champ of the method of calculation used at Krishnapouram.

"It is a necessary preparation, in both of these, to find the time of the sun's continuance above the horizon at the place and the day for which the calculation of an eclipse is made; and the rule by which the Brahmins resolve this problem, is extremely simple and ingenious. At the place for which they calculate, they observe the shadow of a gnomon on the day of the equinox, at noon, when the sun, as they express it, is in the middle of the world. The height of the gnomon is divided into 720 equal parts, in which parts the length of the shadow is also measured. One third of this measure is the number of minutes by which the day, at the end of the first month after the equinox, exceeds twelve hours; four-fifths of this excess is

the increase of the day during the second month; and one-third is the increase of the day during the third month.

"It is plain that this rule involves the supposition, that when the sun's declination is given, the same ratio every where exists between the arch which measures the increase of the day at any place, and the tangent of the latitude; for that tangent is the quotient which arises from dividing the length of the shadow by the height of the gnomon. Now, this is not strictly true; for such a ratio only subsists between the chord of the arch, and the tangent above mentioned. The rule is therefore but an approximation towards the truth, as it necessarily supposes the arch in question to be so small as to coincide nearly with its chord. *This supposition holds only for places in low latitudes; and the rule which is founded on it, though it may safely be applied in countries between the tropics, in those which are more remote from the equator, would lead into errors too considerable to escape observation.*

"*As some of the former rules have served to fix the time, so does this, in some measure, to ascertain the place, of its invention. It is the simplification of a general rule, adapted to the circumstances of the torrid zone, and suggested to the astronomers of Hindūstan by their peculiar situation.*"*

The precession of the equinoxes, or motion from west to east of the points where the ecliptic crosses the plane of the earth's equator, is reckoned in their tables at fifty-four seconds of a degree in the year: it is found to be at present only fifty and a third seconds in the year. From this motion of fifty-four seconds, they have evidently formed many of their calculations. They have a cycle or period of sixty years, each of which has its particular name; another of 3,600 years, and one of 24,000. From the annual motion given by them of fifty-four seconds of longitude in the year, fifty-four minutes of longitude make sixty years,

* See Trans. of the Royal Society of Edinburgh, vol. ii. p. 170.

fifty-four degrees 3,600, and the entire revolution of 360 degrees makes their great period, or *annus magnus*, of 24,000 years, which is often mentioned by them.

The point at which the sun is on the 20th or 21st of March, is called, as with us, the vernal equinox; that at which he arrives on the 20th or 21st of September, the autumnal equinox; on both occasions festivals are observed, but at the vernal equinox, with greater joy and ceremony, in order to salute the return of the sun to the northern tropic, and celebrate the commencement of their favourite season, Visánta, or the spring.

The Hindūs, whether in matters of accounts or science, make their calculations with a surprising degree of quickness and precision, especially when we consider the methods they sometimes employ. M. le Gentil gives an account of a visit he received, soon after his arrival at Pondicherry, from a Hindū, named Nana Moodoo; who, though not a Brahmin, had found means to learn some of the princi-

ples of astronomy. M. le Gentil, to try the extent of his knowledge, gave him some examples of eclipses to calculate, and amongst others, one of a total eclipse of the moon, of the 23d of December, 1768. Seating himself on the floor, he began his work with a parcel of small shells, named Cowries, which he employed for reckoning instead of the pen; and looking occasionally at a book of palm leaves, that contained his rules, he gave the result of his calculation, with all the different phases of the eclipse, in less than three quarters of an hour; which, on comparing it with an Ephemeris, M. le Gentil found sufficiently exact, to excite his astonishment at the time and manner in which the calculation had been performed. Yet the education of Nana Moodoo, by his own account, must have been very confined; and M. le Gentil remarks, that he seemed entirely unacquainted with the meaning of many terms, being unable to explain them.

De la Croze observes, that, " their arith-

metical operations are numerous, ingenious, and difficult, but when once learnt, perfectly sure. They apply to them from their early infancy; and they are so much accustomed to calculate sums the most complicated, that they will do almost immediately what Europeans would be a long time in performing. They divide the units into a great number of fractions. It is a study that seems peculiar to them, and which requires much time to acquire. The most frequent division of the unit is into a hundred parts, which is only to be learnt consecutively, as the fractions are different according to the things that are numbered. There are fractions for money, for weights, for measures; in short for every thing that may be brought to arithmetical operations."*

---

* He adds: "the same practice undoubtedly existed among the Romans, which may explain some passages of ancient authors, as in Horace, Art. Poet. 325.

Romani pueri longis rationibus assem
Discunt in partes centum deducere.

"It may likewise from hence be understood what is

In addition to the preceding remarks, the following passages from the Transac-

---

meant by two passages in Petronius that have hitherto been obscure. In the first, a father says to a teacher:

Tibi discipulus crescit Cicero meus, jam quatuor partes dicit.

" In the other, a man says, boastingly,

Partes centum dico: ad æs, ad pondus, ad nummum.

" I did not venture to give any examples of the calculations of the Indians, though I have many in my possession; but I have no doubt whatever, that the arithmetic of the Indians was the same as that employed by the Greeks and Romans."

The common education of the Hindūs consists in reading and arithmetic. In almost every village a school is to be found. The school-house consists of what is called on the coast of Coromandel, a *pandal*, a large room made of timbers and the broad leaves of the palm tree. A boy goes to school about the age of five years. He begins by writing the simple letters with chalk on the floor; sometimes, with his finger in the sand. The Danish missionary, Mr. Ziegenbalg, who made himself perfectly master of the Malabar, or Tamul language, says that he and his colleague, Mr. Plutchau, began to acquire it by attending the instructions given to children, who learn to read and write at the same time. The boy next learns to pronounce and repeat the letters; he then proceeds to write compounds,

tions of the Royal Society of Edinburgh, will materially illustrate the astronomy of the Hindūs.

---

on leaves of the Talu and Plantain trees, and on paper. After making certain progress in reading and writing, or rather writing and reading, he proceeds to cyphering. In doing this, besides the pen, the Hindūs sometimes calculate, as has been mentioned, with small shells, named Cowries. The school begins early in the morning; at about ten the boys go home to eat; return at the appointed hour, and stay till the evening. The allowance to such masters as are here referred to, when children first go to school, is about a penny, and one day's provisions per month, which, if for the master only, may, probably, be calculated at two-pence. As the boys advance in learning, the wages to the master are increased to four-pence, and as far as eight-pence.*

The pen employed by the Hindūs for writing on paper, is a small reed; on leaves, a pointed iron instrument, or bodkin, with which they may, probably, be said to engrave. The leaves are generally of the palm-tree, and sufficiently thick to receive and preserve the incisure for any length of time, without the risk of its being effaced by usage. Their books consist of a number of those leaves; which, being tied loosely together by a hole pierced at one end, are turned over

* See Ward, on the Religion, Manners, &c. of the Hindūs, vol. iv. p. 224.—The Author's Sketches of the Hindūs, vol. ii. pp. 12, 13.

"The moon's mean place, for the beginning of the Kaly-Yug (that is, for midnight between the 17th and 18th of February, 3102, A. C. at Benares,) calculated from Mayer's tables, on the supposition that her motion has always been at the same rate as at the beginning of the present century, is 10^s 0° 51′ 16″. But, according to the same astronomer, the moon is subject to a small, but uniform acceleration, such, that her angular motion, in any one age, is 9″ greater than in the preceding, which, in an interval of 4801 years, must have amounted to 5° 45′ 44″. This must be added, to give the real mean place of the moon at the astronomical epoch of the Kaly-Yug, which is, therefore, 10^s 6° 37′. Now, the same, by the tables of Tirvalore, is 10^s 6° 0′; the difference is less than two-

---

with facility. Many of those books have been brought to Europe. Epistolary correspondence is maintained on paper. In some parts of India, writings in ink on leaves also, are to be met with.*

* See Sketches of the Hindūs, vol. i. p. 175.

thirds of a degree, which, for so remote a period, and considering the acceleration of the moon's motion, for which no allowance could be made in an Indian calculation, is a degree of accuracy that nothing but actual observation could have produced.

"To confirm this conclusion, Mr. Bailly computes the place of the moon for the same epoch, by all the tables to which the Indian astronomers can be supposed to have ever had access. He begins with the tables of Ptolemy; and if, by help of them, we go back from the æra of Nabonassar to the epoch of the Kaly-Yug, taking into account the comparative length of the Egyptian and Indian years, together with the difference of meridians between Alexandria and Tirvalore, we shall find the longitude of the sun, 10° 21′ 15″ greater, and that of the moon 11° 52′ 7″ greater, than has just been found from the Indian tables. At the same time that this shews how difficult it is to go back, even for a less period than that of 3000 years, in an astronomical computation, it affords a

proof altogether demonstrative, *that the Indian astronomy is not derived from that of Ptolemy.*

"The tables of Ulugh Beig are more accurate than those of the Egyptian astronomer. They were constructed in a country not far from India, and but a few years earlier than 1491, the epoch of the tables at Krishnapouram. Their date is July the 4th, at noon, 1437, at Samarcand; and yet they do not agree with the Indian tables, even at the above-mentioned epoch of 1491. But for the year 3102 before Christ, their difference from them in the place of the sun, is 1° 30′, and in that of the moon 6°; which, though much less than the former differences, are sufficient to prove, *that the tables of India are not borrowed from those of Tartary.*

"The Arabians employed in their tables the mean motions of Ptolemy; the Persians did the same, both in the more ancient tables of Chrysococca, and the later ones of Nassireddin. *It is therefore certain, that the astronomy of the Brahmins is neither*

derived from that of the Greeks, the Arabians, the Persians, or the Tartars. This appeared so clear to Cassini, though he had only examined the tables of Siam, and knew nothing of many of the great points which distinguish the Indian astronomy from that of all other nations, that he gives it as his opinion, that these tables are neither derived from the Persian astronomy of Chrysococca, nor from the Greek astronomy of Ptolemy; the places they give at their epoch to the apogee of the sun and of the moon, and their equation for the sun's centre, being very different from both.*

"A formula † for computing this inequality" (in the moon's motion) "has been given by M. de la Place, which though only an approximation, being derived from theory, is more accurate than that which Mayer deduced entirely from observation; and if it be taken instead of Mayer's, which

* See Trans. of the Royal Society of Edinburgh, vol. ii. p. 155, &c.

† Ibid. p. 160.

last, on account of its simplicity, I have employed in the preceding calculations, it will give a quantity somewhat different, though not such as to affect the general result. It makes the acceleration for 4383 years, dated from the beginning of the Kaly-Yug, to be greater by 17′ 39″ than was found from Mayer's rule; and greater, consequently, by 16′ 32″, than was deduced from the tables of Krishnapouram. It is plain, that this coincidence is still near enough to leave the argument that is founded on it in possession of all its force, and to afford a strong confirmation of the accuracy of the theory, and the authenticity of the tables.

"That observations made in India when all Europe was barbarous or uninhabited, and investigations into the most subtle effects of gravitation, made in Europe near five thousand years afterwards, should thus come in mutual support of one another, is perhaps the most striking example of the progress and vicissitude of science, which the history of mankind has yet exhibited.

"This, however, is not the only instance of the same kind that will occur, if, from examining the radical places and mean motions in the Indian astronomy, we proceed to consider some other of its elements; such as, the length of the year, the inequality of the sun's motion, and the obliquity of the ecliptic, and compare them with the conclusions deduced from the theory of gravity by M. de la Grange. To that geometer, physical astronomy is indebted for one of the most beautiful of its discoveries, viz.—That all the variations in our system are periodical; so that, though every thing, almost without exception, be subject to change, it will, after a certain interval, return to the same state in which it is at present, and leave no room for the introduction of disorder, or of any irregularity that might constantly increase. Many of these periods, however, are of vast duration. A great number of ages, for instance, must elapse, before the year be again exactly of the same length, or the sun's equation of the same magnitude, as

at present. An astronomy, therefore, which professes to be so ancient as the Indian, ought to differ considerably from ours in many of its elements. If, indeed, these differences are irregular, they are the effects of chance, and must be accounted errors; but if they observe the laws, which theory informs us that the variations in our system do actually observe, they must be held as the most undoubted marks of authenticity."*

Professor Playfair then proceeds to examine this question, as M. Bailly has done; and we are persuaded, if the reader will *impartially* peruse the investigations of these learned men, he will be satisfied that the differences alluded to, are neither the effects of chance, nor can be accounted errors.

After examining the duration given to the year by the Brahmins at the period of the Kaly-Yug, Mr. Playfair proceeds:

"The equation of the sun's centre is an

* See Trans. of the Royal Society of Edinburgh, vol. ii. p. 160, &c.

element in the Indian astronomy, which has a more unequivocal appearance *of belonging to an earlier period than the Kaly-Yug.** The maximum of *that equation is fixed, in these tables, at* 2° 10′ 32″. It is at present, according to M. de la Caille, 1° 55′ ½, that is 15′ less than with the Brahmins. Now, M. de la Grange has shewn, that the sun's equation, together with the eccentricity of the earth's orbit, on which it depends, is subject to alternate diminution and increase, and accordingly has been diminishing for many ages. In the year 3102 before our æra, that equation was 2° 6′ 28″ ½ less only by 4′, than in the tables of the Brahmins. But, if we suppose the Indian astronomy to be founded on observations that preceded the Kaly-Yug, the determination of this equation will be found to be still more exact. Twelve hundred

* M. Bailly, in his remarks on the length of the years, supposes some of the observations of the Brahmins to have been made during a period often mentioned by them, of 2,400 years before the Kaly-Yug.

years before the commencement of that period, or about 4300 before our æra, it appears, by computing from M. de la Grange's formula, that the equation of the sun's centre was actually 2° 8′ 16″; so that if the Indian astronomy be as old as that period, its error with respect to its equation is but 2′.*

"The obliquity of the ecliptic is another element in which the Indian astronomy and the European do not agree, but where their difference is exactly such as the high antiquity of the former is found to require. The Brahmins make the obliquity of the ecliptic 24°. Now M. de la Grange's formula for the variation of the obliquity, gives 22′ 32″, to be added to its obliquity in 1700, that is, to 23° 28′ 41″, in order to have that which took place in the year 3102 before our æra. This gives us 23° 51′ 13″, which is 8′ 47″ short of the determination of the Indian astronomers. But if we sup-

* See Trans. of the Royal Society of Edinburgh, vol. ii, p. 163.

pose, as in the case of the sun's equation, that the observations on which this determination is founded, were made 1200 years before the Kaly-Yug, we shall find that the obliquity of the ecliptic was 23° 57′ 45″, and that the error of the tables did not much exceed 2′.

" Thus do the measures, which the Brahmins assign to these three quantities, the length of the tropical year, the equation of the sun's centre, and the obliquity of the ecliptic, all agree, in referring the epoch of their determination to the year 3102 before our æra, *or to a period still more ancient.* This coincidence in three elements, altogether independent of one another, cannot be the effect of chance. The difference, with respect to each of them, between their astronomy and ours, might singly, perhaps, be ascribed to inaccuracy; but that three errors, which chance had introduced, should be all of such magnitude as to suit exactly the same hypothesis concerning their origin, is hardly to be conceived. Yet there is no other alterna-

tive, but to admit this very improbable supposition, or to acknowledge that the Indian astronomy is as ancient as one or other of the periods abovementioned.

"In seeking for the cause of the secular equations, which modern astronomers have found it necessary to apply to the mean motion of Jupiter and Saturn, M. de la Place has discovered, that there are inequalities belonging to both these planets, arising from their mutual action on one another, which have long periods, one of them no less than 877 years; so that the mean motion must appear different, if it be determined from observations made in different parts of those periods. '*Now I find*' (says he) '*by my theory, that at the Indian epoch of* 3102 *years before Christ, the apparent and annual mean motion of Saturn was* 12° 13′ 14″, *and the Indian tables make it* 12° 13′ 13″. *In like manner, I find that the annual and apparent mean motion of Jupiter at that epoch, was* 30° 20′ 42″, *precisely as in the Indian astronomy.*"

"Thus have we enumerated no less than

nine astronomical elements,* to which the tables of India assign such values as do by no means belong to them in these later ages, but such as the theory of gravity proves to have belonged to them three thousand years before the Christian æra. At that time, therefore, or *in the ages preceding it,* the observations must have been made from which these elements were deduced. For it is abundantly evident, that the Brahmins of later times, however willing they might be to adapt their tables to so remarkable an epoch as the Kaly-Yug, could never think of doing so, by substituting, instead of quantities which they had observed, others which they had no reason to believe had ever existed. The elements in question are precisely what these astronomers must have sup-

* "The inequality or the precession of the equinoxes; the acceleration of the moon; the length of the solar year; the equation of the sun's centre; the obliquity of the ecliptic; the place of Jupiter's aphelion; the equation of Saturn's centre; and the inequalities in the mean motion of both these planets."

posed invariable, and of which, had they supposed them to change, they had no rules to guide them for ascertaining the variations; since to the discovery of these rules is required, not only all the perfection to which astronomy is at this day brought in Europe, but all that which the sciences of motion and of extension have likewise attained. It is equally clear that these coincidences are not the work of accident; for it will scarcely be supposed that chance has adjusted the errors of the Indian astronomy with such singular felicity, that observers, who could not discover the true state of the heavens, at the age in which they lived, have succeeded in describing one which took place several thousand years before they were born.*

"The preceding calculations must have required the assistance of many subsidiary tables,—of which no trace has yet been

* See Trans. of the Royal Society of Edinburgh, vol. ii. pp. 169, 170.

found in India,—besides many other geometrical propositions. Some of them also involve the ratio which the diameter of a circle was supposed to bear to its circumference, but which we should find it impossible to discover from them exactly, on account of the small quantities that may have been neglected in their calculations. Fortunately, we can arrive at this knowledge, which is very material when the progress of geometry is to be estimated, from a passage in the *Ayin Akbery*, where we are told that the Hindūs suppose the diameter of a circle to be to its circumference, as 1250 to 3927; and where the author, *who believed it to be perfectly exact*, expresses his astonishment, that among so simple a people, there should be found a truth, which among the wisest and most learned nations had been sought for in vain.

"The proportion of 1250 to 3927, is indeed a nearer approach to the quadrature of the circle; it differs little from that

of Metius,* 113 to 355, and is the same with one equally well known, that of 1 to 3.1416. When found in the simplest and most elementary way, it requires a polygon of 768 sides to be inscribed in a circle; an operation which cannot be arithmetically performed without the knowledge of some very curious properties of that curve, and at least nine extractions of the square root, each as far as ten places of decimals. All this must have been accomplished in India; for, it is to be observed, that the above-mentioned proportion cannot have been received from the mathematicians of the west. The Greeks left nothing on this subject more accurate than the theory of Archimedes; and the Arabian mathematicians seem not to have attempted any nearer approximation. The geometry of modern Europe can much less be regarded as the source of this knowledge. Metius

* Adrian Metius, native of Alkmaar, in Holland. The discovery of spying glasses is attributed to his brother, James Metius.

and Vieta* were the first, who, in the quadrature of the circle, surpassed the accuracy of Archimedes; they flourished at the very time when the Institutes of Akber were collected in India.†

"On the grounds which have now been explained, the following general conclusions appear to be established.

"1st. The observations on which the astronomy of India is founded, were made more than three thousand years before the Christian æra; and, in particular, the places of the sun and moon, at the beginning of the Kaly-Yug, were determined by actual observation.

"This follows from the exact argument of the radical places in the tables of Tirvalore, with those deduced for the same epoch from the tables of De la Caille and Mayer, and especially in the case of the

* Francis Vieta was a native of Fontenai in Poitou. He was born in 1540, and died in 1603.

† See Trans. of the Royal Society of Edinburgh, vol. ii. p. 185.

moon, when regard is had to her acceleration. It follows, too, from the position of the fixed stars in respect of the equinox, as represented in the Indian zodiac; from the length of the solar year, and lastly from the position and form of the orbits of Jupiter and Saturn, as well as their mean motions; in all of which, the tables of the Brahmins, compared with ours, give the quantity of the change that has taken place, just equal to that which the action of the planets on one another may be shewn to have produced, in the space of forty-eight centuries, reckoned back from the beginning of the present.

"Two other of the elements of this astronomy, the equation of the sun's centre, and the obliquity of the ecliptic, when compared with those of the present time, seem to point to a period still more remote, and to fix the origin of this astronomy 1000 or 1200 years earlier; that is 4300 years before the Christian æra:* and the

* That they point to a period more remote than the beginning of the Kaly-Yug, we believe, cannot be de-

time necessary to have brought the arts of calculating and observing to such perfection as they must have attained at the beginning of the Kaly-Yug, comes in support of the same conclusion.

"Of such high antiquity, therefore, must we suppose the origin of this astronomy, unless we can believe, that all the coincidences which have been enumerated are but the effects of chance; or, what, indeed, were still more wonderful, that, some years ago, there had arisen a Newton among the Brahmins, to discover that universal principle, which connects, not only the most

---

nied, but we hope to be excused in saying, that there does not appear to be any reason for dating the *origin* of the Indian astronomy, at 1000 or 1200 years before that. Perhaps it should rather be said, that the Brahmins, 4300 years before the Christian æra, must have been in possession of such or such parts of their astronomy. It is possible that materials may yet be found, to enable Mr. Playfair to carry his researches still farther back into antiquity; but, probably, never to ascertain the origin of a science, which was not delivered ready written, like a book of laws, but progressively carried on and improved, through the course of numerous succeeding ages.

distant regions of space, but the most remote periods of duration; and a De la Grange, to trace, through the immensity of both, its most subtle and complicated operations.

"2dly. Though the astronomy that is now in the hands of the Brahmins is so ancient in its origin, yet it contains many rules and tables that are of later construction.

"The first operation for computing the moon's place from the tables of Tirvalore, requires that 1,600,984 days should be subtracted from the time that has elapsed since the beginning of the Kaly-Yug, which brings down the date of the rule to the year 1282 of our æra. At this time, too, the place of the moon, and of her apogee, are determined with so much exactness, that it must have been done by observation, either at the instant referred to, or a few days before or after it. At this time, therefore, it is certain, that astronomical observations were made in India, and that the Brahmins were not, as they are now, without any know-

ledge of the principles on which their rules were founded. When that knowledge was lost, will not, perhaps, be easily ascertained;* but there are, I think, no circumstances in the tables, from which we can certainly infer the existence of it at a later period than what has just been mentioned; for though there are more modern epochs to be found in them, they are such as may have been derived from the most ancient of all, by help of the mean motions in the tables of Krishnapouram, without any other skill than is required to an ordinary calculation. Of these epochs, besides what have been occasionally mentioned in the course of our remarks, there is one involved in the tables of Narsapour, as late as the year 1656, and another as early as the year 78 of our æra, which remarks the death of Salivahana, one of their princes, in whose reign

* It appears to have been lost since the conquest of their country by strangers; from the want of protection and encouragement, and the effects of persecution and violence. The date seems to prove this.

a reform is said to have taken place in the methods of their astronomy. There is no reference to any intermediate date from that time to the beginning of the Kaly-Yug.

"The parts of this astronomy, therefore, are not all of the same antiquity; nor can we judge, merely from the epoch to which the tables refer, of the age to which they were originally adapted. We have seen that the tables of Krishnapouram, though they profess to be no older than the year 1491 of our æra, are in reality more ancient than the tables of Tirvalore, which are dated from the Kaly-Yug, or at least have undergone fewer alterations. This we concluded from the slow motion given to the moon in the former of these tables, which agreed, with such wonderful precision, with the secular equation applied to that planet by Mayer, and explained by M. de la Place." But the date affixed to the tables at Krishnapouram, coinciding with the year 1491 of our æra, is merely, I presume, the date when the tables were copied there, whereas

those at Tirvalore, are literally taken from the original tables, omitting the date of the copy.

"The Brahmins constantly refer to an astronomy at Benares, which they emphatically style *the ancient*, and which, they say, is not now understood by them, though they believe it to be much more accurate than that by which they now calculate. That it is more accurate, is improbable; that it may be more ancient, no one who has duly attended to the foregoing facts and reasonings, will think impossible; and every one, I believe, will acknowledge, that no greater service could be rendered to the learned world, than to rescue this precious fragment from obscurity."—"The discoveries that may be made on this science, do not interest merely the astronomer and mathematician, but every one who delights to mark the progress of mankind, or is curious to look back to the ancient inhabitants of the globe. It is through the medium of astronomy alone, that a few rays from those distant objects can be conveyed in

safety to the eye of a modern observer, so as to afford him a light, which, though it be scanty, is pure and unbroken, and free from the false colourings of vanity and superstition.

" 3dly. The basis of the four systems of astronomical tables we have examined, is evidently the same.

" Though these tables are scattered over an extensive country, they seem to have been all originally adapted to the same meridian, or to meridians at no great distance, which traverse what we may call the classical ground of India, marked by the ruins of Canoge, Palibothra, and Benares. *They contain rules that have originated between the tropics;* whatever be their epoch, they are all, by their mean motions, connected with that of the Kaly-Yug; and they have besides one uniform character, which it is perhaps not easy to describe. Great ingenuity has been exerted to simplify their rules, yet in no instance, almost, are they reduced to the utmost simplicity: and when it happens that the operations to

which they lead are extremely obvious, these are often involved in an artificial obscurity. A Brahmin frequently multiplies by a greater number than is necessary, where he seems to gain nothing but the trouble of dividing by one that is greater in the same proportion; and he calculates the æra of Salivaganam, with the formality of as many distinct operations, as if he were going to determine the moon's motion since the beginning of the Kaly-Yug. The same spirit of exclusion, the same fear of communicating his knowledge, seems to direct the *calculus*, which pervades the religion of the Brahmin; and in neither of them is he willing to receive or impart instruction. With all these circumstances of resemblance, the methods of their astronomy are as much diversified as we can suppose the same system to be, by passing through the hands of a succession of ingenious men, fertile in resources, and acquainted with the variety and extent of the science which they cultivated.—A system of knowledge which is thus assimilated to

the genius of the people, that is diffused so widely among them, and diversified so much, has a right to be regarded, either as a native, or a very ancient inhabitant of the country where it is found.

" 4thly. The construction of these tables implies a great knowledge of geometry, arithmetic, and even of the theoretical part of astronomy, &c.

" But what, without doubt, is to be accounted the greatest refinement, is the hypothesis employed in calculating the equations of the centre for the sun, moon, and planets; viz. that, of a circular orbit having a double eccentricity, or having its centre in the middle, between the earth and the point about which the angular motion is uniform. If to this we add the great extent of geometrical knowledge requisite to combine this and the other principles of their astronomy together, and to deduce from them the just conclusions, the possession of a calculus equivalent to trigonometry, and lastly, their approximation to the quadrature of the circle; we shall be as-

tonished at the magnitude of that body of science, which must have enlightened the inhabitants of India in some remote age; and which, whatever it may have communicated to the western nations, appears to have received nothing from them."

Professor Playfair examines the construction of the tables contained in Brahminical trigonometry. After mentioning the circumference and division of the circle, he proceeds: "The next thing to be mentioned, is also a matter of arbitrary arrangement, but one in which the Brahmins follow a method peculiar to themselves. They express the radius of the circle in parts of the circumference, and suppose it equal to 3,438 minutes, or 60ths of a degree. In this they are quite singular. Ptolemy, and the Greek mathematicians, after dividing the circumference, as we have already described, supposed the radius to be divided into sixty equal parts, without seeking to ascertain, in this division, any thing of the relation of the diameter to the circumference: and thus, throughout the whole

of their tables, the chords are expressed in sexagesimals of the radius, and the arches in sexagesimals of the circumference. They had therefore two measures, and two units; one for the circumference, and another for the diameter. The Hindū mathematicians, again, have but one measure and one unit for both, viz. a minute of a degree, or one of those parts whereof the circumference contains 21,600. From this identity of measures, they derive no inconsiderable advantage in many calculations, though it must be confessed, that the measuring of a straight line, the radius, or diameter of a circle, by parts of a curve line, namely, the circumference, is a refinement not at all obvious, and has probably been suggested to them by some very particular view, which they have taken, of the nature and properties of the circle. As to the accuracy of the measure here assigned to the radius, viz. 3,438 of the parts of which the circumference contains 21,600, it is as great as can be attained, without taking in smaller divisions than minutes, or 60ths of a de-

gree. It is true to the nearest minute, and this is all the exactness aimed at in these trigonometrical tables. It must not however be supposed, that the author of them meant to assert, that the circumference is to the radius, either accurately or even very nearly, as 21,600 to 3,438. I have shewn, in another place, from the Institutes of Akber,* that the Brahmins knew the ratio of the diameter to the circumference to great exactness, and supposed it to be that of 1 to 3.1416, which is much nearer than the preceding. Calculating, as we may suppose, by this or some other proportion, not less exact, the authors of the tables found, that the radius contained in truth 3437′ 44″ 48‴, &c.; and as the fraction of a minute is here more than a half, they took, as their constant custom is, the integer next above, and called the radius 3438 minutes. The method by which they came to such an accurate knowledge of the ratio of the dia-

* Ayeen Akbery.

meter to the circumference, may have been founded on the same theorems which were subservient to the construction of their trigonometrical tables."

" These tables are two, the one of sines, and the other of versed sines. The sine of an arch they call *cramajya*, or *jyapinda*, and the versed sine *utcramajya*. They also make use of the cosine or *bhujajya*. These terms seem all to be derived from the word *jya*, which signifies the chord of an arch, from which the name of the radius, or sine of 90°, viz. *trijya*, is also taken. This regularity in their trigonometrical language, is a circumstance not unworthy of remark. But what is of more consequence to be observed, is, that the use of sines, as it was unknown to the Greeks, who calculated by help of the chords, forms a striking difference between the Indian trigonometry and theirs. The use of the sine, instead of the chord, is an improvement which our modern trigonometry owes, as we have hitherto been taught to believe, to the Arabs. But whether the Arabs are the

authors of this invention, or whether they themselves received it, as they did the numerical characters, from India, is a question, which a more perfect knowledge of Hindū literature will probably enable us to resolve."

"No mention is made in this trigonometry, of tangents or secants: a circumstance not wonderful, when we consider that the use of these was introduced in Europe no longer ago than the middle of the sixteenth century. It is, on the other hand, not a little singular, that we should find a table of versed sines in the Surya Siddhanta; for neither the Greek nor the Arabian mathematicians, had any such."

After giving an ample explanation of the tables, and the mode of calculating by them, Mr. Playfair says: "Now, it is worth remarking, that this property of the table of sines, which has been so long known in the east, was not observed by the mathematicians of Europe till about two hundred years ago. The theorem, indeed, concerning the circle, from which it is deduced,

under one shape or another, has been known from an early period, and may be traced up to the writings of Euclid, where a proposition nearly related to it forms the 97th of the Data: *If a straight line be drawn within a circle given in magnitude, cutting off a segment containing a given angle, and if the angle in the segment be bisected by a straight line produced till it meet the circumference; the straight lines, which contain the given angle, shall both of them together have a given ratio to the straight line which bisects the angle.* This is not precisely the same with the theorem which has been shewn to be the foundation of the Hindū rule, but differs from it only by affirming a certain relation to hold among the chords of arches, which the other affirms to hold of their sines. It is given by Euclid as useful for the construction of geometrical problems; and trigonometry being then unknown, he probably did not think of any other application of it. But what may seem extraordinary is, that when, about 400 years after-

wards, Ptolemy, the astronomer, constructed a set of trigonometrical tables, he never considered Euclid's theorem, though he was probably not ignorant of it, as having any connexion with the matter he had in hand. He therefore founded his calculations on another proposition, containing a property of quadrilateral figures inscribed in a circle, which he seems to have investigated on purpose, and which is still distinguished by his name. This proposition comprehends in fact Euclid's, and of course the Hindū theorem as a particular case; and though this case would have been the most useful to Ptolemy, of all others, it appears to have escaped his observation; on which account he did not perceive that every number in his tables might be calculated from the two preceding numbers, by an operation extremely simple, and every where the same; and therefore his method of constructing them is infinitely more operose and complicated than it needed to have been."

"Not only did this escape Ptolemy,

but it remained unnoticed by the mathematicians, both Europeans and Arabians, who came after him, though they applied the force of their minds to nothing more than to trigonometry, and actually enriched that science by a great number of valuable discoveries. They continued to construct their tables by the same methods which Ptolemy had employed, till about the end of the sixteenth century, when the theorem in question, or that on which the Hindū rule is founded, was discovered by Vieta. We are however ignorant by what train of reasoning that excellent geometer discovered it; for though it is published in his *Treatise on Angular Sections*, it appears there not with his own demonstration, but with one given by an ingenious mathematician of our own country, Alexander Anderson, of Aberdeen. It was then regarded as a theorem entirely new, and I know not that any of the geometers of that age remarked its affinity to the propositions of Euclid and Ptolemy. It was soon after applied in Europe, as it had been so many ages before in Hin-

dūstān, and quickly gave to the construction of the trigonometrical canon all the simplicity which it seems capable of attaining. From all this, I think it might fairly be concluded, even if we had no knowledge of the antiquity of the Surya Siddhanta, that the trigonometry contained in it is not borrowed from Greece or Arabia, as its fundamental rule was unknown to the geometers of both these countries, and is greatly preferable to that which they employed."

"If we were not already acquainted with the high antiquity of the astronomy of Hindūstān, nothing could appear more singular, than to find a system of trigonometry, so perfect in its principles, in a book so ancient as the Surya Siddhanta. The antiquity of that book, the oldest of the Sastras, can scarce be accounted less than 2000 years before our æra, even if we follow the very moderate system of Indian chronology laid down by Sir William Jones. Now, if we suppose its antiquity to be no higher than this, though it bears

in itself internal marks of an age still more remote, yet it will sufficiently excite our wonder, to find it contain the principles of a science, of which the first rudiments are not older in Greece than 130 years before our æra. The bare existence of trigonometrical tables, though they belong undoubtedly to a very elementary branch of science, yet argues a state of greater advancement in the mathematics than may at first be imagined, and necessarily supposes the application of geometrical reasoning to some of the more difficult problems of astronomy and geography."

"As we cannot suppose the art of trigonometrical calculation to have been introduced till after a long preparation of other acquisitions, both geometrical and astronomical, we must reckon far back from the date of the Surya Siddhanta, before we can arrive at the origin of the mathematical sciences in India. In Greece, the constellations were first represented on the sphere, if we take a medium between the chronology of Newton, and that which is now

generally received, about 1140 years before the Christian æra; and Hipparchus invented trigonometry 130 years before the same æra.* Even among the Greeks, therefore, an interval of at least 1000 years elapsed from the first observations in astronomy, to the invention of trigonometry; and we have surely no reason to suppose, that the progress of knowledge has been more rapid in other countries."

M. de la Place in his *Exposition du Système du Monde*, observes:†

"Les tables Indiennes ont deux époques principales qui remontent; l'une à l'année 3102 avant notre ère, l'autre à 1491. Ces époques sont liées par les mouvemens du soleil, de la lune, et des planètes, de manière qu'en partant de la position que les tables Indiennes assignent à tous ces astres à la seconde époque, et remontant à la première au moyen de ces Tables, on

* Hipparchus, sometimes named Rhodius, was born at Nicæa in Bythinia, in Asia Minor, about 160 years B.C.

† Liv. v. Chap. i.

trouve la conjonction générale qu'elles supposent à cette époque. Le savant célèbre dont je viens de parler, Bailli, a cherché à établir, dans son Traité de l'Astronomie Indienne, que cette première époque étoit fondée sur les observations. Malgré ses preuves exposées avec la clarté qu'il a su répandre sur les matières les plus abstraites, je regarde comme très-vraisemblable qu'elle a été imaginée pour donner dans le zodiaque une commune origine aux mouvemens des corps célestes. Nos dernières Tables astronomiques, considérablement perfectionnées par la comparaison de la théorie avec un grand nombre d'observations très précises, ne permettent pas d'admettre la conjonction supposée dans les Tables Indiennes: elles offrent même à cet égard, des différences beaucoup plus grandes que les erreurs dont elles sont encore susceptibles. A la vérité, quelques élémens de l'Astronomie des Indiens, n'ont pu avoir la grandeur qu'ils leur assignent, que longtemps avant notre ère: il faut, par exemple, remonter jusqu'à six mille ans,

pour retrouver leur équation du centre du soleil. Mais indépendamment des erreurs de leurs déterminations, on doit observer qu'ils n'ont considéré les inégalités du soleil et de la lune, que relativement aux éclipses dans lesquelles l'équation annuelle de la lune s'ajoute à l'équation du centre du soleil, et l'augmente d'une quantité à peu près égale à la différence de sa véritable valeur, à celle des Indiens. Plusieurs élémens, tels que les équations du centre de Jupiter et de Mars, sont très-différens dans les Tables Indiennes, de ce qu'ils devoient être à leur première époque: l'ensemble de ces Tables, et surtout l'impossibilité de la conjonction générale qu'elles supposent, prouvent qu'elles ont été construites, ou *du moins rectifiées* dans des temps modernes. C'est ce qui résulte encore des moyens mouvemens qu'elles assignent à la lune par rapport à son périgée, à ses nœuds et au soleil, et qui plus rapides que suivant Ptolémée, indiquent qu'elles sont postérieures à cet astronome; car on a vu que ces trois mouvemens s'accélèrent

de siècle en siècle. *Cependant, l'antique réputation des Indiens ne permet pas de douter qu'ils aient dans tous les temps cultivé l'astronomie. Lorsque les Grecs et les Arabes commencèrent à se livrer aux sciences, ils allèrent en puiser chez eux les premiers élémens. C'est de l'Inde que nous vient l'ingénieuse méthode d'exprimer tous les nombres avec dix caractères, en leur donnant à-la-fois une valeur absolue et une valeur de position; idée fine et importante, qui nous paroit maintenant si simple, que nous en sentons à peine le mérite. Mais cette simplicité même, et l'extrême facilité qui en résulte pour tous les calculs, placent notre système d'arithmétique au premier rang des inventions utiles; et l'on appréciera la difficulté d'y parvenir, si l'on considère qu'il a échappé au génie d'Archimede et d'Apollonius, deux des plus grands hommes dont l'antiquité s'honore."*

The learned author examines the subject with candour and temper. We have only quoted what we thought immediately referred to our subject. He says, that late astronomical tables, more perfect than those

formerly used, do not allow the admission of the general conjunction of planets supposed to have been observed at the epoch of the beginning of the Kaly-Yug, answering to our 18th of February 3102 years before the Christian æra. The tables here referred to, we presume, did not exist at the time M. Bailly wrote; but M. Bailly only supposes that a conjunction of *some* of the planets from their position in the ecliptic, might have been then noticed at Benares; and he observes that this apparent conjunction is only mentioned by the way, and merely in general terms; and he thinks that the principal astronomical event, at that epoch, was an eclipse of the moon, which M. de la Place has omitted to notice. Though he exposes the defectiveness of the Indian astronomy in some particulars, and though what we shall term their early astronomy might have been afterwards and at different times improved during their intercourse with strangers, M. de la Place nevertheless allows, that the knowledge of

the Indians in science and philosophy, was anterior to that of the Greeks and Arabs.*

Mr. Colebrooke, in his Essay on the Vedas, or sacred writings of the Hindūs, observes, that they abound in every branch of science, and that in them are to be found almost all their system of astronomy. Speaking of their authenticity, he says:

* See Exposition du Système du Monde, p. 330, and the examination of it in the Edinburgh Review, vol. xv. On the passage we have quoted, the Reviewers observe: (p. 414.)—"The fifth book treats of the history of Astronomy. It is hardly necessary to say, that, in the short sketch of that history here presented us, we every where perceive the same masterly hand, and the same comprehensive mind, that we have had so much reason to admire in the more difficult parts of the work. We shall give one extract, which we think ourselves the more bound to lay before our readers, that it is considerably adverse to some opinions on the same subject, which we stated in a former number of this journal. It is not our wish so much to support any particular system on this subject, as to collect the evidence on opposite sides of the question."—They then enter into the subject, and conclude by adhering to the opinions formerly given by them in regard to the Indian astronomy, and its priority to every other, of which we have any knowledge.

"Entertaining no doubts concerning the genuineness of the other works, which have been here described, I think it, nevertheless, proper to state some of the reasons on which my belief of their authenticity is founded. It appears necessary to do so, since a late author has abruptly pronounced the Vedas to be forgeries."*

"It has been already mentioned, that the practice of reading the principal Vedas in superstitious modes, tends to preserve the genuine text. Copies, prepared for such modes of recital, are spread in various parts of India, especially Benares, Jeyenagar, and the banks of the Godaveri. Interpolations and forgeries have become impracticable since this usage has been introduced: and the Rigveda, and both the Yajushes, belonging to the several Sachas, in which that custom has been adopted, have been therefore long safe from alteration."

---

* Mr. Pinkerton, in his Modern Geography.

"The explanatory table of contents, belonging to the several Vedas, also tends to insure the purity of the text; since the subject and length of each passage are therein specified. The index, again, is itself secured from alteration by more than one exposition of its meaning, in the form of a perpetual commentary.

"It is a received and well grounded opinion of the learned in India, that no book is altogether safe from changes and interpolations until it has been commented: but when once a gloss has been published, no fabrication would afterwards succeed; because the perpetual commentary notices every passage, and, in general, explains every word.

"Commentaries on the Vedas themselves exist, which testify the authenticity of the text. Some are stated to have been composed in early times: I shall not, however, rely on any but those to which I can with certainty refer. I have fragments of Uvata's gloss; the greatest part of Sayana's on several Vedas; and a complete one by Ma-

hidhara on a single Veda. I also possess nearly the whole of Sancara's commentary on the Upanishads; and a part of Gaudapada's; with others, by different authors of less note.

" The genuineness of the commentaries, again, is secured by a crowd of annotators, whose works expound every passage in the original gloss; and whose annotations are again interpreted by others. This observation is particularly applicable to the most important parts of the Vedas, which, as is natural, are the most studiously and elaborately explained.

" The Niructa, with its copious commentaries on the obsolete words and passages of scripture, further authenticates the accuracy of the text, as there explained. The references and quotations in those works, agree with the text of the Vedas, as we now find it.

" The grammar of the Sanscrit language contains rules applicable to the anomalies of the ancient dialect. The many and voluminous commentaries on that, and on

other parts of the grammar, abound in examples cited from the Vedas: and here, also, the present text is consonant to those ancient quotations.

"Philosophical works, especially the numerous commentaries on the aphorisms of the Mimansa and Vedanta, illustrate and support every position advanced in them, by ample quotations from the Vedas. The object of the Mimansa is to establish the cogency of precepts contained in scripture, and to furnish maxims for its interpretation; and, for the same purpose, rules of reasoning, from which a system of logic is deducible. The object of the Vedanta is to illustrate the system of mystical theology taught by the supposed revelation, and to shew its application to the enthusiastic pursuit of unimpassioned perfection and mystical intercourse with the divinity. Both are closely connected with the Vedas: and here, likewise, the authenticity of the text is supported by ancient references and citations.

"Numerous collections of aphorisms,

by ancient authors,* on religious ceremonies, contain, in every line, references to passages of the Vedas. Commentaries on these aphorisms cite the passages at greater length. Separate treatises also interpret the prayers used at divers ceremonies. Rituals, some ancient, others modern, contain a full detail of the ceremonial, with all the prayers which are to be recited at the various religious rites for which they are formed. Such rituals are extant, not only for ceremonies which are constantly observed, but for others which are rarely practised; and even for such as have been long since disused. In all, the passages taken

---

* "The Sutras of Aswalayana, Sanchyayana, Bauddhayana, Catyayana, Latayana, Gobhila, Apastamba, &c.

"These, appertaining to various Sachas of the Vedas, constitute the calpa, or system of religious observances. I have here enumerated a few only. The list might be much enlarged, from my own collection; and still more so, from quotations by various compilers; for the original works, and their commentaries, as well as compilations from them, are very numerous."

from the Vedas agree with the text of the general compilation.

"The Indian legislators, with their commentators, and the copious digests and compilations from their works, frequently refer to the Vedas; especially on those points of the law which concern religion. Here also the references are consistent with the present text of the Indian scripture.

"Writers on ethics sometimes draw from the Vedas illustrations of moral maxims; and quote from their holy writ passages at full length, in support of ethical precepts. These quotations are found to agree with the received text of the sacred books.

"Citations from the Indian scripture occur in every branch of literature, studied by orthodox Hindūs. Astronomy, so far as it relates to the calendar, has frequent occasion for reference to the Vedas. Medical writers sometimes cite them; and even annotators on profane poets occasionally refer to this authority, in explaining

passages which contain allusions to the sacred text.

"Even the writings of the heretical sects exhibit quotations from the Vedas. I have met with such in the books of the Jainas, unattended by any indication of their doubting the genuineness of the original, though they do not receive its doctrines, nor acknowledge its cogency.

"In all these branches of Indian literature, while perusing or consulting the works of various authors, I have found perpetual references to the Vedas, and have frequently verified the quotations. On this ground I defend the authentic text of the Indian scripture, as it is now extant; and although the passages which I have so verified are few, compared with the great volume of the Vedas, yet I have sufficient grounds to argue, that no skill in the nefarious arts of forgery and falsification, could be equal to the arduous task of fabricating large works, to agree with the very numerous citations, pervading thousands of volumes, composed on divers sub-

jects, in every branch of literature, and dispersed through the various nations of Hindūs inhabiting Hindūstān and the Dekhin."*

"It is necessary in this country, as every where else, to be guarded against literary impositions. But doubt and suspicion should not be carried to an extreme length. Some fabricated works, some interpolated passages, will be detected by the sagacity of critics in the progress of researches into the learning of the East; but the greatest part of the books received by the learned among the Hindūs, will assuredly be found genuine. I do not doubt that the Vedas, of which an account has been here given, will appear to be of this description."

---

* Mr. Colebrooke adheres to the Persian nomenclature of the Peninsula; by which the country, from the mountains that separate it from Cashmire, &c. down as far as the river Nerbudda, or about the 22d degree of latitude, is called Hindūstan, and from thence southward, Deckhan, or Dekhin.

"To each Veda a treatise, under the title of Jyotish, is annexed, which explains the adjustment of the calendar, for the purpose of fixing the proper periods for the performance of religious duties. It is adapted to the comparison of solar and lunar time with the vulgar or civil year; and was evidently formed in the infancy of astronomical knowledge. From the rules delivered in the treatises which I have examined, it appears that the cycle there employed, is a period of five years only. The month is lunar; but at the end, and in the middle, of the quinquennial period, an intercalation is admitted, by doubling one month. Accordingly, the cycle comprises three common lunar years, and two, which contain thirteen lunations each. The year is divided into six seasons; and each month into half months. A complete lunation is measured by thirty lunar days; some one of which must of course, in alternate months, be sunk, to make the dates agree with the nycthemera. For this purpose, the sixty-second day ap-

pears to be deducted;* and thus the cycle of five years consists of 1860 lunar days, or 1830 nycthemera; subject to a further correction, for the excess of nearly four days above the true sidereal year: but the exact quantity of this correction, and the method of making it, according to this calendar, have not yet been sufficiently investigated to be here stated. The zodiac is divided into twenty-seven asterisms, or signs, the first of which, both in the Jyotish and in the Vedas, is Crittica, or the Pleiads."

"The deities, presiding over the twenty-seven constellations, are enumerated in the three verses of the Jyotish belonging to the Yajush, and in several places of the Vedas."

"In several passages of the Jyotish, these names of deities are used for the con-

---

* "The Athenian year was regulated in a similar manner; but, according to Geminus, it was the sixty-third day, which was deducted. Perhaps this Hindū calendar may assist in explaining the Grecian system of lunar months."

stellations over which they preside; especially one, which states the situation of the moon, when the sun reaches the tropic, in years other than the first of the cycle. Every where these terms are explained, as indicating the constellations, which that enumeration allots to them."*

With respect to those who have disputed the antiquity of Indian literature, he adds, that "they have grounded their opposition on assertions and conjectures, inconsiderately hazarded, eagerly received, and extravagantly strained."

He concludes his essay on the Vedas with the following observation; "The preceding description may serve to convey some notion of the Vedas. They are too voluminous for a complete translation of the whole: and what they contain would hardly reward the labour of the reader; much less, that of the translator. The ancient dialect, in which they are composed, and especially that of the three first Vedas,

* Asiat. Res. vol. viii. p. 479, et seq.

is extremely difficult and obscure; and, though curious, as the parent of a more polished and refined language (the classical Sanscrit) its difficulties must long continue to prevent such an examination of the whole Vedas, as would be requisite for extracting all that is remarkable and important in those voluminous works: but they well deserve to be occasionally consulted by the Oriental scholar."*

It is observed by Sir William Jones, "that we must not confound the system of the Jyautishicas, or mathematical astronomers, with that of the Pauranicas, or poetical fabulists; for to such a confusion alone, must we impute the many mistakes of Europeans, on the subject of Indian science." Nor should the various glosses and commentaries on the Vedas and Laws of Menu, be confounded with, or interpreted as equivalent to what is expressed in those works themselves.

The following passages from the learned

* Asiat. Res. vol. viii. p. 497.

Journal, which we have already had occasion to cite,* shall close our inquiries relative to the astronomy of the Hindūs:

"Besides the arguments that tend immediately to prove the antiquity of the astronomy of the Hindūs, there are others that do so indirectly, by marking it as a system distinct from those that are known to have existed in Greece and Arabia; the only countries, it would appear, from which India can have borrowed. We had occasion already to remark the great difference between the tables of Tirvalore and those of Ptolemy, and of Ulugh Beigh, when we calculated from them the places of the sun and moon at the beginning of the Kali-Yug. We might remark the same sort of dissimilitude on comparing them either

* The Edinburgh Review, for July, 1807, vol. x. pp. 469, et seq. The strictures given in the text, it may be proper to state, were written in answer to two articles by Mr. J. Bentley, in the 6th and 8th volume of the "Asiatic Researches;" in which he endeavours to combat the received opinions concerning the remote antiquity of the Indian astronomy.

with the Arabic or the Persian tables, so that they seem essentially distinguished from all the systems of ancient astronomy, of which any distinct records have been preserved.

"In several of the other astronomical methods, not contained immediately in the tables, the same appearance of originality is discovered. Such is the rule by which the Brahmin of Tirvalore, who instructed Le Gentil, computed the length of the day at the different seasons of the year. That rule consisted in an approximation to a trigonometric result, made by a method quite peculiar, and applicable only to very low latitudes. The trigonometry contained in the Surya Siddhanta, of which Mr. Davis has given so curious an account, is very different from any thing of the same sort that we meet with in other quarters. The theorem from which the investigation of the sines is deduced in that trigonometry, has been pointed out,* and is a proposition that was known to the Greek

* Edinb. Trans. vol. iv. p. 83, et seq.

geometers, but not applied by them in a way at all similar to that explained in the Surya Siddhanta. The remark on which the computation in that work proceeds, that each number in the tables is related in the same way to the two that go before it, is abundantly subtle, and escaped the mathematicians of Europe, till within two centuries of the present time.

"To this we may add the rectification of the circle, or the computation of the length of its circumference, made by a rule known in India before it was known in Europe, and remarkable for its accuracy. This we are informed of in the Institutes of Akber, where the proportion of the circumference to the diameter is said to be stated by the Hindūs, at 3927 to 1250, which is the same with that of 3.1416 to 1; an approximation very near the truth, and the same which we now employ in our computations, though we believe that it was hardly known in Europe at the time when the Emperor Akber reigned in India.*

* Ayeen Akbery, vol. ii. p. 317.

"The consideration of these facts, and of many more which it would be easy to produce, ought to keep our curiosity alive to the remains of science in the East. Their extent and accuracy are so considerable, their origin and genealogy so completely unknown, they are united with so much extravagance and superstition, and so totally separated from any general stock of knowledge, that we cannot but consider them as forming altogether the most enigmatical monument of antiquity that is to be found on the face of the earth. We wish to consider this subject as still requiring much investigation, and we would wish to prevent opinion from taking on this head, any fixed and determinate position. The probability seems to us to be much in favour of the great antiquity of these curious remains."*

* See Note D. in the Appendix.

CHAPTER IX.

ARCHITECTURE AND ANCIENT STRUCTURES OF THE HINDŪS.

THAT the Hindūs possessed a knowledge of the mechanical powers, which in the lapse of time, and under the oppressions of their conquerors, has been lost, may, among other proofs, be inferred from those huge and ponderous masses of granite to be seen in their ancient edifices, raised to wonderful heights above the level of the ground. The ceilings of gateways, and of rooms of lofty elevation, are to be observed, formed by slabs of granite, placed laterally, and nicely shaped to each other, some measuring above thirty feet in length with a proportional thickness.* Many edi-

* See description of the temple of Seringham, &c. in

fices, of immense size, and curious and skilful structure, are yet in perfect preservation, though of such remote antiquity, that no legend or tradition exists of the epochs when they were erected. Inscriptions still remaining on them, are no longer intelligible; yet, from the solidity of their construction, and the durability of their materials, they have hitherto resisted all the effects of time. The inscriptions alluded to, must either be in a language that was anterior to the Sanscrit, or which, if coexistent with it, may have been some secret one, known only to the learned amongst the priesthood, but which in the course of numerous succeeding ages has been lost: or, if in the Sanscrit language, that the characters may have been so changed, as in the case of our own language, as to render the reading and explanation difficult to those who have attempted them. Those temples, which are to be met

Monuments Anciens et Modernes de l'Hindoustan, par L. Langlès, p. 24.

with, formed by excavations into mountains, may be of yet more ancient dates than those raised by the architect on sites chosen for the purpose. The subterraneous temples which have as yet principally attracted the attention of Europeans, are those at Gayah and Ellora, those on the islands of Salsette and Elephanta, those at Mavalipuram, and those in Cabul and Candahar, which (as already noticed) formed part of the ancient Indian empire.

The subterraneous excavations at Ellora, in the Deckhan, extending, with a few intervals, over a tract of nearly two leagues, consist of gateways, areas, temples, halls, rooms that must have served for dwelling-places, and extensive corridors. Some of those excavations are in two stories, one immediately above the other, the roofs of each supported by columns, cut and shaped out of the solid rock, without being detached from it. Every where, but especially in the temples, are to be seen statues and sculptures in relief, exhibiting subjects taken from the Hindū mythology. It appears

from an account given of them, by Sir Charles Malet, who visited them in 1794,* that those excavations are not only very numerous, but some of them of vast extent. Though indisposition prevented him from seeing all of them, he nevertheless visited, and has given a description of fifteen distinct places, some of them consisting of several rooms. One named by the Hindūs, *paradise,* besides the temple, which is spacious, has above twenty other rooms and passages. He concludes his account by saying :—" It is necessary to observe, that there are a great many other excavations in the semi-circular mountain that commands a view of the fine valley of Ellora, which indisposition prevented my visiting. Whether we consider the design, or contemplate the execution, of these extraordinary works, we are lost in wonder at the idea of forming a vast mountain into almost eternal mansions. The mythological symbols and figures throughout the whole, leave no room

---

* Asiatic Researches, vol. v. p. 135.

to doubt their having owed their existence to religious zeal, the most powerful and most universal agitator of the human mind.

"The ancient Brahmins avoided the contamination of cities, and affected the purity and simplicity of rural retirement; when far removed from observation, the imagination of their disciples probably enhanced the merits of their sanctity. To alleviate austerities, and to gratify the devout propensities of these holy men, naturally became objects of pious emulation. Under this influence, the munificence of princes may have been engaged to provide them retreats; which, sanctified by the symbols of their adoration, were at once suited, in simplicity and seclusion, to those for whom they were intended, and in grandeur to the magnificence of their founders."

The article on Ellora, in the fifth volume of the Asiatic Researches, contains a fac-simile of ancient inscriptions, taken by Mr. Wales, an able and ingenious artist, who went thither for the purpose of making drawings of the excavations, and of the country

contiguous to them.* The inscriptions are translated by Capt. Francis Wilford, who says:—"I despaired at first of being able to decypher them; however, after many fruitless attempts, we were so fortunate as to find at last an ancient sage, who gave us the key, and produced a book in Sanscrit, containing a great many ancient alphabets formerly in use in different parts of India. This was really a fortunate discovery, which hereafter may be of great service to us."

"There is an apparent stamp of antiquity upon these excavations, superior to those of Elephanta, Mavalipooram, &c. for there are fewer figures distorted with a multiplicity of arms and heads; there is a grace almost Grecian in several of the deities; and throughout, much less of grotesque barbarism and obscenity than is found in the more recent structures of their superstition. The wealth, the power, and

* Views from the drawings of Mr. Wales have been published by Mr. Daniel.

the labour, requisite to form these excavations, equal, if not surpass, all that must have been employed in the edifices of Egypt."*

A description of the excavations on the island of Elephanta, is to be found in the Asiatic Researches.† This modern name of the island, is supposed to have been given by the Portugueze, from the statue of an Elephant as large as life, in black marble, which is near the usual landing place on the island.

Those on the island of Salsette are described by Anquetil du Perron.‡

We shall be more particular in regard to Malvalipuram, having ourselves resided some years in that part of India. This place is on the sea-coast, about thirty-eight miles south from Madras. The first written account given of it, that we have seen, is one by Mr. Chambers,§ and another by

* Vincent, vol. ii. p. 413.—See also Thevenot.

† Vol. iv. p. 407. ‡ Vol. i. p. 385, et seq.

§ Asiatic Researches, vol. i. p. 145.

Mr. Goldingham.* Mr. Chambers observes, that the name as here pronounced, *Mavali-puram,* is Tamulic, or in the language vulgarly called Malabar; but that the proper name in Hindū and Sanscrit is, Maha-Bali-pur, or *the city of the Great Bali.* Besides the places formed by excavations in the rocks, the remains of numerous buildings are to be traced on the surface of the hill, as well as on the plain below it. After passing several objects of inferior note, the first that attracts attention in mounting the hill, is a small Hindū temple, covered with sculpture, and hewn out of a single detached mass of granite, about twenty-six feet in height, nearly the same in length, and about fourteen in breadth. Within it, is a *Lingam,* and an inscription on the walls, in a character now unknown to the Hindūs. Mr. Chambers remarks, that it neither resembles the Devanagari, nor any of the characters connected with or derived from it. Contiguous to this, the

* Asiatic Researches, vol. v. p. 69.

surface of the rock, for about ninety feet in extent, is covered with sculptures, the most conspicuous of which is a gigantic figure of Krishna; near him are, his favorite Arjoun, in the attitude of prayer, and a venerable figure, said to be the father of Arjoun. Among the figures of several animals, there is one, which the Brahmins name *Singam*, or lion, but which is not an exact resemblance of that animal; nor is this surprising, as the lion is not an inhabitant of this part of Asia; but in the same group the elephant, monkey, and other figures, are executed with spirit and fidelity.—At a small distance are the ruins of some temples built of brick surrounded by a wall of stone, and an excavation in the rock, fronting the east, the massive roof of which is supported by rows of columns, but now so much corroded by the air of the sea, as to render it impossible to form a just idea of their original shape. A little farther on is a more spacious excavation, now used as a *Choultry*, or place of accommodation for travellers. Figures, sculptured

on the wall fronting the entrance into it, represent Krishna attending the herds of Ananda, the Admetus of the Hindūs; from which circumstance Krishen is called Goupaul, or the *Cowherd*, as Apollo in this quality was named by the Greeks, Nomius. In the group is a man playing on a flageolet to a child, and a figure of Krishen larger than life, attended by Goppias, or nymphs, who may be termed the Hindū muses.

On the pavement of this room, is another inscription, in characters also now unintelligible. The ascent of the hill from hence, is at first gradual and easy, and where otherwise, it is rendered so by steps shaped out of the rock. A winding staircase leads to a temple likewise cut out of the rock: in it are several figures in relief, which being sheltered from the sea-air, by fronting the west, are in perfect preservation. The top of the hill is strewed with fragments, said to be the remains of a palace.—At one end of a rectangular polished slab of granite, ten feet in length, with steps to ascend to it, is the figure of a

Singham couchant; the Brahmins of the place call this slab the couch of Dhermah Rajah. Further on, is a reservoir cut into the rock, which is said to have been, originally, a bath for the use of the female inhabitants of the palace. Descending over immense fragments of stone, is a spacious excavation destined as a temple of Siva, who in the centre compartment, is represented of large stature, with four arms, the left foot resting on a bull couchant. Near him on the left is a small figure of Brahma, one of Vishnu, and another of the goddess Parvati. At one end of this temple is a gigantic figure of Vishnu sleeping, his head reclining on an immense hooded snake rolled in numerous coils, and having several heads, so disposed as to form a canopy with their heads over the head of the God.* At the opposite end of this temple is the consort of Siva, with eight arms, and mounted on a *Singham*; fronting her, a gigantic

---

* See description of the rock of Jehangueery, supra, vol. i. p. 97, note.

figure of human shape with the head of a buffalo; between them a man suspended with his head downward. The goddess has several warlike weapons, and some armed attendants of diminutive size. The monster opposite to her with the head of the Buffalo, is armed with a club. In the character of Durga, and protectress of the virtuous, she is supposed to be rescuing from the figure with the head of the buffalo, the person represented as suspended between them.

On a spot considerably elevated over this excavated temple, is a smaller one, wrought out of a single block of granite, and similar to one already described. Within it, is a slab of polished granite, resembling the one called by the Brahmins, the couch of Dhermah. Adjoining is another temple of nearly equal dimensions, but in a rude state, and which evidently had never been finished. On the plain at the bottom of the hill, is a village, chiefly inhabited by Brahmins. Near to it are remains of many stone edifices, and a large tank surrounded

with stone steps descending from the margin to the bottom.* Contiguous is a small temple, with a canopy of stone, which attracts attention by the beauty of its construction. The canopy is supported by four columns with bases and capitals, each of a single piece of granite, about twenty-seven feet in height, and five feet and a half in diameter at the base; but instead of being fluted, or smooth and round, or presenting four equal sides, each has sixteen equal sides. East of the village, and washed by the sea, is a temple containing a Lingam, and dedicated to Siva. In this temple, besides other figures, there is one of a gigantic size stretched on the ground, and fastened to it. The Brahmins say that it represents a prince, who was conquered and thus

* Numerous *tanks* of this kind are to be found in every province of India, some in front of temples, others for the use and ornament of towns. They are of a quadrangular form; but it is said that the Hindūs, from some superstitious notion, never construct any thing of an exact square, though the deviation from it is sometimes so small as not to be perceptible to the eye.

secured by Vishnu. The waves now wash the door of the innermost apartment of this temple where the Lingam is placed, but before which Mr. Chambers supposes there were several spacious courts, such as are frequently to be found in the construction of great Hindū temples; and the column, that must have been used to ascertain the meridian when the temple was begun, and placed in front of it, is now seen standing at some distance from it in the sea.

In the neighbourhood of this building are detached fragments of it washed also by the waves; some have sculptures on them, but these are much defaced. The Brahmins assert, that, beyond this, lie the ruins of a city, said to have been of great magnitude and magnificence, and which, though formerly several miles distant from the ocean, is now covered by it. Many circumstances tend to confirm this assertion. Mr. Goldingham says that a Brahmin of about fifty years of age, a native of the place, assured him that his grandfather had seen the gilt tops or pinnacles of the

towers of five different temples, under water, but which are no longer visible. That this once flourishing city was destroyed in some remote age, by one of those extraordinary convulsions which our globe has undergone, and to which it is subject, and not by the gradual encroachment of the sea, as sometimes occurs, cannot be doubted. Remains of buildings are to be observed, which evidently were never finished, and whose execution must have been arrested by the event. Mr. Chambers, speaking of some of these, says:* "though the outward form of some temples is complete, the ultimate design of them has manifestly not been accomplished, but seems to have been defeated by some extraordinary convulsion of nature. For the western side of the most northerly one, is excavated to the depth of four or five feet, with a row of pillars left on the outside to support the roof; but here the work has been stopped, and an uniform rent of about four

* Asiat. Res. vol. i. p. 152.

inches broad has been made throughout the solid rock, and appears to descend to its foundations, which are probably at a prodigious depth below the surface of the ground. That this rent has happened since the work was begun, or while it was carrying on, cannot be doubted; for the marks of the masons' tools are perfectly visible in the excavated part on both sides of the rent, in such a manner as to shew plainly that they have been divided by it. Nor is it reasonable to suppose that such a work would ever have been designed, or begun, upon a rock that had previously been rent in two."

About a mile south from the village are structures similar to those already described. One of these is about forty feet in height, twenty-nine in breadth, and nearly the same in length, formed out of a single stone, the outside of which is covered with sculpture. The next to this is also cut from one mass, in length forty-nine feet, in breadth and height twenty-five, and rent through the middle from top to

bottom. Beside these, there are three smaller structures of stone. Here also is a statue of a Singham, or lion, much bigger than life, and near it an elephant, but which is only nine feet in height and large in proportion, exhibiting the true figure and character of the animal; and both Mr. Chambers and Mr. Goldingham speak with praise of the manner in which several of the sculptures at Mavalipuram are executed. They appear to be the works of no mean artists. Mr. Goldingham has given exact copies of eighteen different inscriptions.*

Many circumstances exist, to prove that the sea must once have covered all the country named Carnatic Payen-ghaut, as far as the range of mountains that separate it from the provinces named Carnatic Balanghaut, or the low and high Carnatic: and

* For an account of Mavalipuram, see also "Monuns Anciens et Modernes de l'Indoustan, by M. Langl ' p. 47, *et seq.*; and "Journal of a Residence in by Maria Graham," p. 155.

since its general recession, it has again in some places encroached upon the former. At what period, or from what cause the country was inundated, are subjects, we presume, that will ever remain hypothetical. Amongst the proofs alluded to, that the Carnatic Payen-ghaut was once overflowed, are the quantities of petrified marine productions, and calcareous masses, evidently composed of sea shells, that are to be found not only in the plains, but also on the mountains above mentioned. Nor can it be doubted that what now forms the island of Ceylon, was once a part of the peninsula of India.

The excavations that are to be met with in different parts of Candahar, but especially in the mountains named by Rennell, Hindoo-Kho, the Indian Caucasus, seem still more wonderful than the others we have mentioned. Captain Wilford* supposes the name Paropamisus given by the

* Asiatic Researches, vol. i. p. 455, *et seq.*

Greeks to a branch of those mountains, to be derived from the compound Sanscrit name Para-Vami, meaning the pure and excellent city of Vami, a place of great antiquity situated between the city of Cabul and Bahlac. The Buddhaists, or followers of Buddha, pretend that it was once the metropolis of their sect. What now remains of the city of Para-Vami, or as it is vulgarly called Bamiyan, consists of a vast number of apartments and recesses formed in the rocky mountain; some of which, on account of their extraordinary dimensions, are supposed to have been temples. They are called Samach'h, in the language of the country, and by the Persians Samaij. Some of them are adorned with carved work, and remains of figures in relief, and paintings on the walls. It is said in the Ayeen Akbery,* under the *statistical account of Candahar*, that there are about 12,000 of these recesses in the Tuman, or district of Bamiyan, which is also confirmed by

* Vol. ii. London edit. page 188.

the reports of travellers. "The country of the Afghans, as far as Bahlac and Badacshan, abounds with such excavations: some of them are very rude, whilst others are highly finished and ornamented. The most perfect are at a place called Mohi, on the road between Bamiyan and Bahlac: as they are situated amongst precipices, the Musalmans have never thought of living in them; and some of the paintings, with which they are adorned, yet look fresh. But what never fails to attract the notice of travellers, are two colossal statues, which are seen at a great distance. They are erect, and adhere to the mountain, from which they were cut out. They are in niches, the depth of which is equal to the thickness of the statues. It is said in the Ayeen Akbery, that the largest is eighty ells high, and the other only fifty. These dimensions are greatly exaggerated; according to the opinion of all the travellers I have seen, the disproportion is not so great, between the two. According to the author of the Pharangh-Jehanghiri

cited by Dr. Hyde,* they are said to be only fifty cubits high; which appears to be the true dimensions. At some distance from these two statues, is another of a smaller size, being about fifteen cubits high. Native and Persian authors, who have mentioned them, agree neither about their sex, nor their names. The few Hindūs, who live in these countries, say, that they represent Bhím and his consort: the followers of Buddha affirm that they are the statues of Sháhámá, and his disciple Sálsálá. The Musalmāns insist, that they are the statues of Key-Umursh and his consort, that is to say, Adam and Eve; and that the third is intended for Seish or Seth, their son; whose tomb, or at least the place where it stood formerly, is shewn near Bahlac. These statues are so much defaced by the effects of time, and the intolerant zeal of the Musulmāns, that I believe

* Professor at Oxford. See his Treatise on the Religion of the ancient Persians, and De Ludis Orientalibus, &c. &c.

it is difficult to ascertain their sex. Travellers do, however, agree that one of them at least, is a beardless youth: some more particularly insist that the swelling of the breasts is remarkably obvious, and that both look towards the east; so that, when the sun rises, they seem to smile, but look gloomy in the evening. These statues were visited, at least ten or twelve different times, by a famous traveller, called Meyan-Asod-Shah, who is a man highly respected, both on account of his descent from Mohammed, and also for his personal character. He informed me lately, that these two statues are in two different niches, and about forty spaces distant from each other. That the drapery is covered with embroidery and figured work; which formerly was painted of different colours, traces of which are still visible. That one certainly represents a female, from the beauty and smoothness of her features, and the swelling of her breasts: the head being so much elevated is secure from injury from those below, and is also protected from the weather by the projec-

tion above. The statue of their supposed son is nearly half a mile distant, and about twenty feet high. One of the legs of the male figure is much broken; for the Musulmāns never march that way with cannon without firing two or three shots at them; but from their want of skill, they seldom do much mischief. As to their being hollow, I believe, it is an idle tale: at least the travellers, I have consulted, knew nothing of it. Between the legs of the male figure, is a door leading into a most spacious temple; the size of which, they could not describe otherwise, than by saying, that it could easily hold the camp-equipage and baggage of Zemaun-Shah, and of his whole army. It is remarkable only for its extraordinary dimensions: it is dark and gloomy; and there are a few niches, with the remains of some figures in *alto-relievo.* At the entrance are stationed a few wretched Banyans, who sell provision to travellers. The greatest part of the excavations in the district of Bamiyan, are now inhabited by Musalmāns who live promis-

cuously with their cattle. I have been informed, that there are no other statues, than the three here mentioned; but, from the numerous fragments, which are seen through the districts, there must have been several hundreds of them. They shew to this day the Samach'h, in which the famous Vyasa composed the Vedas; and others, where divers holy men gave themselves up to meditation, and the contemplation of the Supreme Being."

" Bamiyan, though not mentioned by name in Nonnus's Dionysiacs, is well described by him as the abode of the benevolent Brongus, who lived in Samach'hes, or recesses artfully excavated in the mountains. Brongus is obviously the Bhranga, or Bhrangas of the Puranas, called also Sarasa'la, and of whom I shall speak more fully hereafter.—Bamiyan appears also to be the town called Drastoca, by Ptolemy; which is derived from the Sanscrit Drashatca, and implies the *stone-city*. Its distance and bearing from Cabura, or Orthospana, the present city of Cabul, puts it beyond doubt.

The upper Naulibis, or Nilabi, in Ptolemy, falls in at Ghor-bund, or Goracsha-van, in Sanscrit, which appears to be the *Alexandria ad Paropamisum* of the historians of Alexander. It was called Nilabi, from its being situated on the banks of the Nilab. The immense ridge between Nilabi and Drashatca, or Drashtaca, is properly delineated in Ptolemy. *Alexandria ad Paropamisum* was near the cave of Prometheus, which is to be seen to this day, near the pass of Sheibar, between Ghor-band and Bamiyan. Orthospana, or simply Asbana, is mentioned in the Peutingerian table. It is called also in Sanscrit, Jayini-Devi, or the place of the goddess of victory, and is the Nicæa (a word of the same import) of the historians of Alexander. The place where her temple stood, is close to Cabul, and is still secretly visited by Hindū pilgrims. The Nicæa of the historians of Alexander is probably the Nicæa of Nonnus, which he calls also Astacia, perhaps from Asacia, or Asyacia; for, according to the Puranas, Jayini-Devi, or the nymph Nicæa, was also

called A'syaca; A'saca would be as grammatical; and the town of A'saca, or A'syaca, in a derivative form, would be A'syaceya, or A'saceya; or, according to the idiom of the Greek language, Asyacia and Asacia."*

In the Ayeen Akbery it is said: "In one of these Summijes, or recesses, is a tomb, in which there is a coffin, containing a corpse, concerning which the oldest persons can give no account. It is held in great veneration. The ancients certainly were possessed of some medical preparations, with which, if they anointed dead bodies, and afterwards buried them in a dry soil, they suffered no injury from time; and there can be no doubt but this corpse must have been preserved after that manner, although the ignorant suppose it something miraculous."†

* Wilford.

† For the description of the temples at Gaya, in the Vindhya mountains, see Asiatic Researches, vol. i. p. 276, *et seq.*; and we recommend to the attention of the reader a letter from Mr. (now Dr.) Charles Wilkins, on the subject of the inscriptions in those temples, in the same volume, p. 279, and in vol. ii. p. 167.

To give an account of the stupendous ancient temples, and what may be termed monasteries, that are to be met with in India, would extend this article to much too great length. In the countries of the Deckan, but especially in the southern parts of it, they are extremely numerous, and some of them are of immense magnitude.

CHAPTER X.

OF THE MANNERS, CUSTOMS, ETC. OF THE HINDŪS.

Aversion from the shedding of blood, inculcated by religion, and confirmed by education and habit;—the effects of a climate, which lessens the wants of life;—perhaps too, the moderate use of animal food even with those to whom it is allowed; together with abstinence from spirituous liquors;—may all contribute to render the Hindūs, generally speaking, perhaps, the mildest inhabitants of the globe.* That

* Nor does the practice of human sacrifices, which, it is said, once existed among them, affect our opinion of their general character. They had been led erroneously to believe, that sacrifices, the most averse from

they should have patience and resignation under adversity, are qualities, which from the causes we have mentioned, might be expected in them: the Hindū, however, under the influence of religion, ideas of honour, or from a sense of shame, will not only meet death with indifference, but em-

---

their feelings, were due to an offended God, and would serve to assuage his wrath, or obtain his protection: hence also we find Agamemnon sacrificing his daughter Iphigenia, and Abraham, to prove his obedience, on the point of sacrificing his son Isaac. To believe that any act of cruelty should be acceptable to a Being, who is all goodness, and on whose mercy we depend for forgiveness of our misdeeds, is an idea so grossly repugnant to reason, that it is difficult to conceive how it should have ever obtained credit; and, though introduced in times of barbarism, how it should have continued to be practised, as it appears to have been, long after the Hindūs had become a refined and enlightened nation: but the same observation is equally applicable towards the Greeks; and we are sorry to add, that the persecutions which were so long and so cruelly exercised by the Romish against the Protestant Christians, excite similar reflections. The mild Hindū would weep over the sacrifice he offered, but the European persecutor exulted in his crime.

brace it by choice. Of this disposition in regard to the people, generally, as of the bold and active courage which characterizes the Cshatriya or military cast, numerous examples might be given. We shall select only a few.

The Rajah of Ongole having been driven from his possessions by the late Nabob of the Carnatic, Mahomed Ally,* after some fruitless attempts to recover them, resolved to make a final effort for that purpose. He accordingly entered the province at the head of those who had accompanied him in his flight; and was soon joined by many of his former subjects. The officer who commanded the troops of the East India Company that were stationed in the province,† marched to oppose him. The parties met: in the engagement the Rajah was killed by a musket shot; and most of his principal followers having also fallen, the

* Known in history by that name, but who afterwards assumed that of Walaw Jaw.

† Lieut. Colonel Thomas Fletcher.

rest of his troops were broken and dispersed. The English commander, being informed that a relation of the Rajah was on the field wounded, went up to him with an interpreter, to offer him his protection and assistance. He found him lying on the ground, and speaking to an attendant, of whom he was inquiring whether the Rajah's body had been saved and carried off the field. Being informed that it had, without deigning to reply to the officer, he gave himself a wound with his poniard, of which he almost instantly expired.

M. de Bussy having, in 1757, led the army which he commanded, into the provinces called the Northern Sircas, the revenue of which had been assigned to the French, by the Nizam Salabat Jung; Viziaramrauze, Rajah of Vizianagaram, the most powerful Rajah of Cicacole, was chiefly consulted by M. de Bussy, on the affairs of that province, and enjoyed a principal share in his confidence. Viziaramrauze being entrusted with the management and collection of the revenue, made

use of his authority to gratify an animosity that had long occupied his mind.

Some of the possessions of Rangarow, Rajah of Boobeli, bordered upon the territory belonging to Viziaramrauze, and disputes concerning their boundaries, and diverting the course of streams,* had frequently occurred between them: but the secret, and probably most powerful cause of hatred, was the consequence which Rangarow derived from superior birth, and who could not always conceal the indignation which a consciousness of this is apt to produce in persons of an elevated mind, when exposed to the insolence of one of inferior extraction, to whom fortune has been more propitious. Rangarow enjoyed the honour of an illustrious ancestry. He claimed his descent from the ancient kings of Orixa, and his person and family were universally respected. The family of Vi-

* In a country where water is so much required for cultivation, this is often the subject of great dissension between neighbouring proprietors of lands.

ziaramrauze had been raised and enriched by intrigues at the courts of Mohammedan viceroys. He took an early opportunity of writing to Rangarow, calling on him to attend him as the delegate of the government, and to account with him for his tribute. The other saw the danger to which he was exposed if he refused—the indignity, if he complied; but his feelings being too powerful to yield to the suggestions of prudence, without deigning to reply, he wrote to M. de Bussy, assuring him of his readiness to conform in every thing to his commands, except attending on his enemy; a mortification he conjured him not to insist upon. The letter was probably intercepted by Viziaramrauze, and Rangarow's silence and non-appearance were construed into insolence and disaffection. About the same time, some Sepoys in the French service, with some of Viziaramrauze's Peons, in attempting to enter the Boobeli district, were driven back. The people of that country say, they were sent on purpose by him, without any communication

to the Rajah, with a view to provoke resistance. But in whatever way it arose, this circumstance confirmed the opinion M. de Bussy had been taught to entertain; and Viziaramrauze availed himself of that disposition, to persuade him to march against Boobeli. When Rangarow was informed of the motions of the French army, and that Viziaramrauze accompanied it; the former attempt that had been made to enter his territory, and his letter not having been replied to, concurred in making him believe that his ruin was resolved. Being too high spirited to fly, or preferring any alternative to that of living as a suppliant in another country, he took the fatal resolution to prepare for defence, and suffered himself to be shut up in an ill-constructed fort with his family and principal relations. The place was attacked; the artillery soon made a breach in the walls, but the besieged, fighting with the courage produced by resentment and despair, repulsed an assault, though sustained with per-

severing intrepidity. On the 24th of January, 1758, a second assault was made and repulsed as the former had been; but the number of the besieged being now much diminished, Rangarow assembled his kinsmen, and informed them, that as it was impossible to defend the place much longer, or probably even to resist another assault, he had resolved not to survive his misfortunes, nor expose himself and family to be dragged as captives before an enemy whom he despised: he did not wish, however, that his own feelings and sentiments should have any influence on their conduct; nor did he see that they stood in the same predicament that he did. But they unanimously approved and adopted his determination. He then sent for his only child, an infant son, and taking him in his arms, and giving him his last embrace and blessing, delivered him to the care of two officers, on whose intrepidity and prudence he could depend, with directions to convey him to one of his friends, a Rajah, among the

western mountains, with this message: "Rangarow sends you his son, as the last proof of his confidence and friendship."

The resolution taken by the men was universally approved and adopted by all their female relatives. A short time was now employed in performing religious ceremonies, and in preparing for the flames those dwellings where they had hitherto lived in peace and happiness. The women assisted the men in that office with alacrity and zeal, and every one received the wound of death, from the hand of the person to whom she was most nearly allied, or gave it with her own. This dreadful scene being closed, the men set fire to their dwellings, that they might yet see this last ceremony performed, and be certain that the bodies of their women should not be exposed to insult.

The enemy observing the conflagration, had again mounted the breach at the time Rangarow and his followers returned to it. He fell with all who accompanied him, as they disdained to receive quarter. The

only living persons found in the fort were a few Brahmins, who related the dismal tale.*

M. de Bussy, deeply affected by this dreadful catastrophe, resolved to quit a place that constantly recalled to his mind the unhappy fate of its late inhabitants.

The two officers to whose care Rangarow had confided his son, having successfully executed the trust that was committed to them, came disguised as *Yogeys*, or ascetics, into the camp of Viziaramrauze the day preceding that on which the army was to march from the neighbourhood of Boobeli. With the freedom allowed to those devotees, they took their station under a tree near his tent, without being questioned. In the night they privately entered it, by creeping on the ground, and cutting a

* In Quintus Curtius we have an example similar to this:—"Sed cum in obsidione perseverasset, oppidani, desperatâ salute, ignem subjecere tectis, se quoque ac liberos conjugesque incendio cremant. Quod cum ipsi augerent, hostes extinguerent, nova forma pugnæ erat; delebant incolæ urbem, hostes defendebant."—*Q. Curt.* lib. ix. c. 4. (tom. ii. p. 168, *ed. Bipont.*)

passage in a side of it where there happened to be no centinel. He was a corpulent, unwieldy man: they found him lying on his bed asleep; but awaking him, and telling him who they were, they struck him with their poniards. The guards, on hearing a noise, rushed in; but Viziaramrauze was dead, being pierced with many wounds. Though the murderers might, probably, have escaped by the way they came in, they made no attempt to do so; but standing, and pointing to the body, said, "Look here; we are satisfied." They related the means they had taken to avenge their chief; and, having declared that no other person was concerned with them in their enterprize, they suffered death with the composure of men who had foreseen their fate, and were perfectly resigned to it.*

* According to the customs of the Hindūs, the history of the Boobeli Rajah, and the circumstances above mentioned, are commemorated in songs; as the adventures of chieftains were formerly celebrated and sung by the Bards and Troubadours of Europe.

When Devi-Cotah was taken by the English in 1749, some officers examining the different buildings of the fort, found in one of the chambers a Tanjorine lying on the ground desperately wounded; whom, being unable to move without assistance, the garrison in their precipitate flight had neglected to carry off. He was an officer of rank, and an Indian of a superior cast. He was taken care of by the captors, but with a sullen obstinacy refused every kind of aid, nor would submit to the necessary treatment for his wounds until he found that the surgeon was about to use force; but he was no sooner left alone than he stripped off the bandages, and tore open his wounds. Some persons were, therefore, appointed to watch him. He was removed from the place where he was found into a thatched hut in a distant part of the fort, that his rest might not be disturbed. Finding himself constantly watched, he behaved for three days with so much composure, that they, to whose care he was entrusted, thought he was reconciled

to life, and relaxing their attention, left him in the night, as they imagined, asleep; but the Tanjorine soon seized the opportunity of their absence to creep to a corner of the hut, where a lamp was burning, and with it set fire to the thatch; which, in that dry season of the year, caught the blaze so fiercely, that he was suffocated before it was possible to reach him.*

We shall conclude these examples of desperate acts of courage, by relating a more recent melancholy event. A body of English troops was sent in January, 1809, against Lutchman Dow, Rajah of Adjyghur in the province of Bundelcund.† We are ignorant of the cause of dispute.

---

* See Orme's History of the Transactions of the British nation in Hindūstān, vol. i. p. 116.

† Bundela, or Bundelcund, is a mountainous tract on the S.W. of the Jumnah, of about a hundred miles square, inhabited by a tribe of Rajahpouts. Contiguous to it on one side are the English possessions of Oude and Benares, and on the other side those of the Mahrattas. In it are the diamond mines of Panna and Purna, supposed to be the Panassa of Ptolemy.

After various operations, Adjyghur was besieged, and on the 9th February surrendered to the English, it being agreed to give the Rajah, by way of indemnity, a Jaghire, or estate, in another quarter. After the surrender of his fort, he took up a temporary residence at Bandah, in the British territories, leaving his family in the meantime at a village near to Adjyghur, named Terwaney. He had continued to reside at Bandah till the beginning of June, when he suddenly disappeared. Apprehension of his having absconded with some hostile design, induced the English chief in the province of Bundelcund, to send instructions to the officer commanding at Adjyghur, to arrest the family of the Rajah at Terwaney. A party was accordingly despatched from Adjyghur for this purpose, and all the men of the family were conveyed to the fort, except an old man, father-in-law of Lutchman Dow, who was directed to prepare the women and children for their removal. Having entered the apartments of the women

in consequence of the order he had received, the door was immediately shut behind him. The person who commanded the party, after waiting a considerable time, advanced to open it, but it was found fastened: repeated calls were made to those within, but no answer was given; nor on listening, could any sound be heard. The door was then forced open, when the dead bodies of the whole family, women, children, and the old man himself, were seen extended, in their blood, on the floor. From the perfect silence which had prevailed, it was evident that no compulsion had been used, and that all had preferred death to the risk of exposing themselves to insult. It seemed equally evident, that the women themselves had supplied the instrument of death, which was found lying on the ground; for it is stated that the old man, when he went into the apartment, had no weapon of any kind. A nephew of the Rajah, who was among those who had been carried into the fort, also attempted to destroy himself, but was prevented,

After various operations, Adjyghur was besieged, and on the 9th February surrendered to the English, it being agreed to give the Rajah, by way of indemnity, a Jaghire, or estate, in another quarter. After the surrender of his fort, he took up a temporary residence at Bandah, in the British territories, leaving his family in the meantime at a village near to Adjyghur, named Terwaney. He had continued to reside at Bandah till the beginning of June, when he suddenly disappeared. Apprehension of his having absconded with some hostile design, induced the English chief in the province of Bundelcund, to send instructions to the officer commanding at Adjyghur, to arrest the family of the Rajah at Terwaney. A party was accordingly despatched from Adjyghur for this purpose, and all the men of the family were conveyed to the fort, except an old man, father-in-law of Lutchman Dow, who was directed to prepare the women and children for their removal. Having entered the apartments of the women

in consequence of the order he had received, the door was immediately shut behind him. The person who commanded the party, after waiting a considerable time, advanced to open it, but it was found fastened; repeated calls were made to those within, but no answer was given; nor on listening, could any sound be heard. The door was then forced open, when the dead bodies of the whole family, women, children, and the old man himself, were seen extended, in their blood, on the floor. From the perfect silence which had prevailed, it was evident that no compulsion had been used, and that all had preferred death to the risk of exposing themselves to insult. It seemed equally evident, that the women themselves had supplied the instrument of death, which was found lying on the ground; for it is stated that the old man, when he went into the apartment, had no weapon of any kind. A nephew of the Rajah, who was among those who had been carried into the fort, also attempted to destroy himself, but was prevented,

tyrdom, rather than renounce their faith; but what would seem irreconcilable with the qualities attributed by us to the Hindūs, is, that a crime so repugnant to nature as that of infanticide should be found to exist among them; yet while the fact must be admitted, the very information that establishes it, proves at the same time, that the practice is confined to a few families belonging to some turbulent warlike tribes. One of these, named Raj-Kumars, inhabits a small district in the neighbourhood of Benares. Mr. Jonathan Duncan,* in a letter written by him, while resident there, dated the 26th April, 1789, says: "Their number, it is said, doth not altogether exceed forty thousand; most of whom inhabit, in nearly one society, the opposite line of our boundary, in the dominions of his excellency the Vizier. They are originally Raja-Putras;† and even ex-

* Afterwards Governor of Bombay.

† The Raj-Putra, or, as it is commonly said, Raj-Put, is a division of the Cshatriya, or military class.

ceed that tribe in the wildness of their notions, and peculiarity of their manners; scarcely owning any allegiance, either to the Vizier's, or to our government; and always ready to betake themselves to arms, to which they are from infancy inured, in resentment either of public or private wrongs, real or imaginary. At the same time they have, I am assured, a sense of honour, from which they do not deviate; and are noted for faithfully adhering to such engagements as they may contract."

He afterwards says, in a letter of the 2d October, 1789: "I am told, and it is indeed generally believed, that it is no unfrequent practice among the tribe of Rajkumar to destroy their daughters, by causing the mothers to refuse them nurture; whence this race of men do often from necessity marry into other Raj-put families. The greatest exception that I can find to this melancholy truth is, that now and then, the more wealthy Rajkumars will sometimes spare, and bring up their female issue;

especially where they happen to have none of the male line. This horrid custom is said to exist also among some other tribes, more especially in the Vizier's dominions, and is thought to be founded in the extravagant desire of independency entertained by this race of men; joined, perhaps, to the supposed necessity of procuring a suitable settlement in marriage for these devoted females, were they allowed to grow up; and the disgrace which would ensue from any omission in that respect."

And again in a letter of the 26th December, 1789: "Having been lately through that part of the country where those of the Rajkumar tribe reside, I have conversed with several of them; and having, from their own confession, found that the custom of female child-murder has long been and still continues very prevalent among them, as noticed in my address of the 2d October, I have prevailed on those situated within our frontier, to agree to renounce in future this horrid practice; to

which effect they have entered into the engagement which will be found translated in the accompanying extract of my proceedings.—And as this baneful habit is not confined to the Rajkumars, but extends, though not in a degree so prevalent, to the tribe called Raghuvansa,* who reside in our *Pergunna* of Mongra, and *Talook* of Chandwack, and in other parts, I have taken measures for their signing a separate similar engagement, from which I have very sanguine hopes that this system of infanticide will be put a stop to, or be, at least, greatly lessened; as all the Rajkumars with whom I conversed, did, while they admitted the fact, fully acknowledge its atrocity; in extenuation of which, they pleaded the great expense of procuring suitable matches for their daughters, if allowed to grow up."

It appears that infanticide was also practised by some Raj-put families in Guzurat,

* Or Raj-bunses.

and other parts of India.* The practice of widows burning themselves with the bodies of their deceased husbands, exists in almost every province of India; and though it is carefully discouraged in the territories belonging to the English, still the numbers of victims yearly are considerable. The intention of so barbarous a custom is sufficiently evident; and in all oriental countries, the superiority and security of the husband, and the preservation of his domestic authority, seem to have been a main object with legislators. Yet the law rather recommends, than ordains this sacrifice. It is said:

"The woman who burns herself with her husband, purifies the family of her mother, her father, and her husband."

"There is no virtue greater than a virtuous woman's burning herself with her husband."

---

* See "Hindū Infanticide," by Edward Moore, published at London, 1811.

See also Asiatic Researches, vol. iv. article xxii. p. 363, et seq. 8vo. edition;—and note E, in the Appendix.

"No other effectual duty is known for virtuous women, at any time after the death of their lords, except casting themselves into the same fire."

"As long as a woman, in her successive transmigrations, shall decline burning herself, like a faithful wife, on the same fire with her deceased lord, so long shall she be not exempted from springing again to life in the body of some female animal."

"If the husband be out of the country when he dies, let the virtuous wife take his slippers, or other things of his apparel, and binding them on her breast, after purification, enter a separate fire."

"A woman who may be pregnant, or doubtful whether she be so, or menstruous, cannot ascend the pile"—and the Vishnoo Pooranŭ adds, "or lately brought to bed."

"If the husband die on the third day of the wife's menstrual discharge, and she desire to burn with him, the burning of his corpse shall be delayed one day to accommodate her."

"If the wife be within one day's journey of the place where the husband died, and signify her wish to burn with him, the burning of his corpse shall be delayed till her arrival."

As soon as her husband dies, she is to declare her resolution of burning with his body. Taking in her hand a twig of the mango tree, she proceeds with it to where the body has been carried, and sits down beside it. The edges of her feet are then painted of a red colour. She afterwards bathes, and puts on new clothes. During these preparations, the drum beats a certain sound, by which it is known that a widow is about to burn herself. Numbers from curiosity and devotion resort to the place. The son of the deceased takes charge of preparing the things necessary for the ceremony. If there be no son, the nearest male relation does it, and if no relation, this duty devolves on the chief, or head person of the place. An oblong hole being dug in the ground, beams of green wood

are laid across it, which are covered with faggots, dried hemp, strewed with Ghee,* pitch, and other combustible materials. The chief of the officiating Brahmins goes to the widow, and causes her to repeat certain appropriate parts of worship; in which she prays, that, by the act she is about to perform, her husband, father, mother, and their ancestors, may with her be forgiven their offences. The prayers being ended, she takes off her ornaments, and distributes them to her friends, ties some red cotton yarn round both wrists, puts a new comb in her hair, and paints the marks of her cast on her forehead. While these things are performing, the dead body is anointed with ghee, and having a new dress put on, prayers are chaunted over it. He who has the charge of the ceremony taking some rice in his hands, offers it in sacrifice in the name of the deceased. Ropes being extended over the bed of combustibles, and a sheet of new cloth spread over them, the

---

* Clarified butter.

dead body is laid on it. The widow then walks seven times round the pile, strewing parched rice and Cowries,* as she goes, which are given to her for the purpose. The rice and Cowries are caught by the bystanders with great avidity as they fall, from the idea that the possession of them will serve to prevent or cure certain diseases. The widow having ascended the pile, and laid herself down by the body of her husband, the sheet is drawn over them, the bodies bound together with the ropes, and faggots laid upon them. The son of the deceased, or principal actor in the ceremony, turning his face from the pile, applies a lighted torch to it opposite to the head of the deceased, and persons placed round the pile, with torches in their hands, then set fire to it on all sides. If local situation admits of it, the ceremony is performed near to some sacred river, in order

* Small sea-shells, used in some parts of India as an inferior money.

to throw into it the bones, or ashes of the deceased.*

Some Hindūs, in different parts of India, bury the dead, and among these it is the duty of the widow in certain tribes, or families, to bury herself with the body of her husband. The religious ceremonies being performed, she descends into the grave with him, and taking the body in her arms, is with it covered with the earth.†

---

* Accounts of those sacrifices, by persons who were present at them, are to be found in numerous authors: see Bernier, Tavernier, Holwell, Sketches of the Hindūs, Asiatic Annual Register, Ward, &c. &c. The account here given, seems to be the most circumstantial of any which the author at present recollects.

† Bernier, after speaking of women who burn themselves, says: "Ce sont certainement des choses bien barbares et bien cruelles; mais ce que font les Brahmens dans quelques endroits des Indes est bien autant ou plus. Car, au lieu de brûler ces femmes, qui veulent mourir après la mort de leur mari, il les enterrent peu-à-peu toutes vives, jusqu'à la gorge; et puis tout d'un coup se jettent deux ou trois dessus, leur tordent le cou, et les achevent d'étouffer."

See likewise Voyages de M. Dellon, en 1668, tome i. p. 143, &c. Amsterdam.

The Hindūs, in general, are great observers of decorum; their manners are unaffected; and they are cautious not to say or do any thing which they imagine may offend, or serve to recall ideas that may be painful.

The mental faculties of the human species seem to arrive sooner at maturity in India than in colder climates; and it is not uncommon to see children behave and speak with a degree of gravity and propriety that seems incompatible with their age.

It is said that the Hindūs were prohibited under the severest penalty, that of losing their cast, from quitting their country without permission;* and the rules and restrictions with respect to their diet, render it almost impossible, without some dispensation in that respect being previously obtained. Whether merchants and bankers have a general dispensation, or travel by

* Indi enim prope gentium soli nunquam emigravêre finibus suis.—*Plin.* lib. vi. c. 20. tom. i. p. 374. (Ed. Bipont.)

particular leave of the principal Brahmins at the places where they reside, we know not; but they and their agents now, as formerly, are sometimes to be met with in different foreign countries. Every where, however, they abstain from eating such food as is forbidden by their laws, particularly any thing that may not have been prepared by persons of their casts; and they fail not to observe, as far as may be possible, their ablutions, and other religious duties.

Abul Fazil, after speaking of the religious tenets of the Hindūs, says, "Summarily, the Hindūs are religious, affable, courteous to strangers, cheerful, enamoured of knowledge, fond of inflicting austerities upon themselves, lovers of justice, given to retirement, able in business, admirers of truth, grateful, and of unbounded fidelity. Their character shines brightest in adversity. Their soldiers know not what it is to fly from the field of battle.* They have great respect for their rulers, and make no

* Meaning of course the Cshatriya, or military cast.

account of their lives, when they can devote them to the service of God. If any person in distress flies to them for protection, although he be a stranger, they take him by the hand, and will defend him at the expense of their property, reputation, and life."*

Though this account seems rather a list of good qualities than a faithful portrait of character, and though some of those qualities may perhaps be exaggerated, it must nevertheless be allowed, that such praise from a Mohammedan, and from one who possessed so much knowledge of the Hindūs as Abul Fazil, speaks strongly in favor of their manners and character in general.

As all the different professions amongst the Hindūs form so many classes or tribes, it may be said that every one learns from his father the trade he belongs to, nor can he quit it for any other.

The people in general are naturally

* Ayeen Akbery, edit. 1800; vol. ii. pp. 322 and 324.

cheerful, and fond of conversation, play, and sports. They will spend almost the whole night in seeing dancing, and hearing music; yet none dance, or play on musical instruments, but those whose profession it is; the *dancing women* devote themselves to the pleasure and amusement of the public.

The food of the Hindūs of all tribes is prepared in earthen vessels, or potter's ware: instead of plates and dishes, they use broad leaves, generally of the palm or plantain tree, neatly sewn together with a blade of grass, and which are thrown away, and renewed at every meal. Like the inhabitants of most eastern countries, they use neither forks nor spoons, but only the fingers of the right hand, and are scrupulously nice in washing their hands both before and after meals. The left hand is reserved for such offices as are judged to be uncleanly.

With them modes and fashions are unknown; and their dresses, like their customs, are the same to-day as they probably

were at the beginning of the Kaly-Yug; unquestionably the same as found by the first Greeks who visited them.

The general dress of the common people and labourers, consists of a piece of cotton cloth wrapped round the body, over the loins, one end of which being passed between the legs, is tucked in behind; in places where the turban is not used, the head is bound with a piece of white linen. The rich and higher classes, besides the cloth round the body, have a piece of muslin over it, one end of which extends to the ankles; another piece thrown over the left shoulder, passes under the right arm, and a piece, in the shape and size of a handkerchief, is adjusted neatly to the head.

Many persons, and especially the inhabitants of cities, instead of the cloth thrown over the shoulder, wear a jama, or muslin robe, neatly shaped to the upper part of the body, but falling very full from thence, so low as almost entirely to cover the feet. A muslin sash is wrapped round the waist, the ends of which are generally ornamented

with a border and fringe. Persons of high rank sometimes wear above the jama a short loose vest, or jacket of fine worked muslin, or silk brocaded with small gold or silver flowers, and Cashmire shawls in the cool season. It is, however, doubtful whether the jama and turban may not be of foreign import, as they are not commonly met with in places remote from great towns.

Almost all the Hindūs wear ear-rings and bracelets, more or less valuable, according to their means of procuring them. On days of ceremony, princes and persons of high rank, besides bracelets and ear-rings have jewels on their turbans, and strings of pearls round their necks, hanging down upon the breast; on their feet slippers embroidered with gold, and those of princes, at great ceremonies, even with precious stones.* The slippers are con-

* "Corpora usque pedes carbaso† velant; soleis pedes, capita linteis vinciunt, lapilli ex auribus pendent; brachia quoque et lacertos auro colunt, quibus inter popu-

† Carpasa is the Sanscrit name for the cotton plant.

broidered in different colours. A piece of white cotton cloth, wrapped several times round the loins, and falling down over the legs almost to the ankle on one side, but not quite so low on the other, serves as a petticoat. A wide piece of muslin is thrown over the left shoulder, which, passing under the right arm, is crossed round the middle; and, being fastened by tucking part of it under the piece of cloth that is wrapped round the loins, hangs down to the feet. They sometimes lift one end of this piece of muslin, and spread it over the head, to serve as a veil. The hair is commonly rolled up into a knot, or bunch, towards the crown of the head, and fastened with a gold or silver bodkin: some have curls that hang before and behind the ears. The ornamental parts of dress depend on the means of the wearer for procuring them, but no new modes are introduced. They have bracelets on their arms, rings in their ears, on their fingers, their ankles, and toes, and frequently a small ring on one side of the nostril.

Such are the dresses we have observed among the Hindūs, whatever part of their country we have visited. Mr. Forster, in his "Journey from Bengal to England," says, that in Cashmire, the women likewise wear the short jacket above-mentioned, but, instead of the cloth wrapped round the loins, they have a red petticoat with a border of different dyes, and instead of the hair being tied in a knot on the top of the head, have it, as is to be seen with the dancing women, plaited and hanging down behind, and a muslin veil that covers the head and extends rather lower than the middle of the body.

The Hindūs are averse from many of those accomplishments in women which are admired by Europeans. They say, they would be injurious to that simplicity of manners, and decorum of behaviour, which are requisite to render them estimable in their families; that, by too much engaging the mind, they would divert their attention from their children and husbands, and give them a disrelish for those cares

for which they think providence has designed them. But the dancing-women, who, like the courtezans of ancient Greece, are the votaries of pleasure, are taught every qualification which may tend to captivate and amuse the other sex. They compose a separate class, live under the protection of government, and according to their own particular rules.

In the code of Hindū laws and customs, it is said; "If the property of a dancing-woman should by any circumstance become subject to seizure, the magistrate shall except her clothes, jewels, and dwelling. In the same manner, to a soldier shall be left his arms; and to a man exercising any profession, the implements of that profession; but the rest of his property may be confiscated."

The dancing-women appear in a variety of dresses. Beside those already mentioned, they sometimes wear trowsers, like the Persians; a Jama of worked muslin, or gold or silver tissue; the hair plaited and hanging down behind, with spiral curls on

each side of the face; and to the gold or silver rings on the ankles, in some of their dances they attach small bells of the same metals. The figures of the Bacchantes, which occur in some antique paintings, engravings, and sculptures, may serve to represent some of the dancing-women of India.

No religious ceremony, or festival of any kind, is thought to be performed with requisite propriety and magnificence, unless accompanied by dancing; and every temple has a set of dancers belonging to it, which is more or less numerous, according to the importance and wealth of the foundation.

In a country of such vast extent of latitude, the complexion as well as the physical constitution of the people must be liable to variation; those in the northern parts being fairer and more robust than those in the southern provinces. But the Hindū women, in general, are finely shaped, gentle in their manners, and have something soft and musical in their voices. Mr.

Forster, in his letter from Cashmire, dated in April, 1783, speaking of the women, says: "They have a bright olive complexion, fine features, and are delicately shaped. There is a pleasing freedom in their manners, without any tendency to immodesty, which seems the result of that confidence which the Hindū husbands in general repose in their wives."*

All Hindū families are governed by the male senior, to whom great respect is shewn; nor will a son sit down in the presence of his father, until commanded by him so to do. Mr. Forster observes, that in the course of his residence in India, and acquaintance with the Hindūs, he never knew an instance of direct undutifulness to parents.

In the code of Hindū laws, we find mention made of fire-arms; which, as the translator† observes, in records of such unfathomable antiquity, must cause a consi-

* Journey from Bengal to England, vol. i. p. 309.

† Mr. Halhed.

derable degree of surprise. The word in Sanskrit is *agny aster,** or weapons of fire; and mention is also made of *shet-agny,* or the weapon that kills a hundred men at once, which is translated *cannon.* The Pooran Sastra ascribes the invention of these destructive engines to the divine artist Visvacarma,† who, according to Sir William Jones, is the Vulcan of the Hindūs.

In parts of India that never were frequented either by Mohammedans or Europeans, we have met with rockets, a weapon which the natives almost universally employ in war. The rocket consists of a tube of iron, about eight or ten inches long, and above an inch in diameter. It is filled in the same manner as an ordinary sky-rocket, and fastened towards the end of a piece of bamboo, scarcely as thick as an ordinary walking cane, and about five feet long, which is pointed with iron. At the upper end of the tube, or that towards the head of the shaft, is the match. The man who

---

* See vol. i. p. 116. † Ibid, p. 117.

uses it, points the end of the shaft that is shod with iron, to the object to which he means to direct it; and, setting fire to the match, it goes off with great velocity. By the irregularity of its motion, it is difficult to be avoided, and sometimes acts with considerable effect, especially among cavalry, whom it throws into disorder.

Fire balls, or *blue lights*, employed occasionally in besieged places in the night, to observe the motions of besiegers, are, we believe, to be found in every part of Hindūstān, and in greater perfection than any that are made in Europe.* Fire-works seem to have been a principal article of amusement with the Hindūs from the earliest times, and are constantly used on occasions of rejoicing. The author does not, however, venture to affirm, that gunpowder, granulated, or such as is made at present, was known to the Hindūs before it was discovered by the Europeans; but it

* In France, lights of this kind used in fireworks, are named, *Bengalis*.

seems evident that they knew, not only much earlier than we did, but even when the Greeks became first acquainted with them, a composition that possessed its quality, of giving to bodies a projectile motion. Had they received the discovery of it from strangers, they would have received at the same time the weapons with which it is employed, and, in that case, would not have had recourse to the less ingenious invention of the rocket, though, being accustomed to this weapon, they may still continue to use it.

For *shet-agny*, we are at a loss to account, unless it mean those cavities which are found in some of the ancient fortresses, hewn in the solid rocks, and which some have supposed to have been formed for the purpose of throwing stones on besiegers, in the manner that shells are thrown from mortars.

Though chariots of war, we believe, are no longer to be met with, they are frequently mentioned in their ancient writings. " The horse, chariots, elephants, and infan-

try, are called *the four members of an army.* On each flank, the horse; on the two flanks of the horse, the chariots; on the two flanks of the chariots, the elephants, &c."*

In the same article of the Hindū laws, by which poisoned weapons are forbidden, it is also said: "Nor shall he (meaning the prince) slay in war an eunuch, nor any person, who, putting his hands together, shall supplicate for quarter; nor any one who has no means of escape; nor any one who is sitting down; nor one who says, *I am become of your party:* nor any man who is asleep; nor any one who is naked;

---

* The Heetopades.

Quintus Curtius says: "Summa virium in curribus:—Senos viros singuli vehebant; duos clypeatos, duos sagittarios ab utroque latere dispositos; cæteri aurigæ erant, haud sane inermes; quippe jacula complura, ubi cominus preliandum erat, omissis habenis, in hostem ingerebant. Cæterum vix ullus usus hujus auxilii eo die fuit. Namque, ut suprà dictum est, imber violentius quam alias fusus, campos lubricos et inequitabiles fecerat: gravesque, et propemodum immobiles currus, illuvie et voraginibus hærebant." Qu. Curt. lib. viii. c. 14, tom. ii. pp. 147, 148.

nor any one who is not employed in war, or who is come to see the battle; nor any one whilst he is fighting with another; nor any one whose weapons are broken; nor any one who is fearful of the fight, and who runneth away." These humane injunctions, however, are but very rarely observed.

The venereal disease, that destructive enemy of the human race, is now to be met with, we believe, in most parts of Hindūstan; and it may be presumed from thence, that it may have existed there before the voyages of Columbus and Vesputius to the western hemisphere. Had it been carried into India by Europeans since the discovery of America, the epoch is so recent, and the evil so great, that in a country inhabited by an enlightened people, and in which there is a constant correspondence between the principal towns, the time when it appeared, and probably also the people by whom it was introduced, would have been marked and handed down to us. But, we apprehend, that no such tradition is to

be found. It is however, to be observed, that there is no Sanscrit word for this malady, which is universally expressed by using the Persian name *Atashac.*

When we observe how few and simple the utensils are, that are employed by the Hindū artisans of every kind, we are naturally surprised at the niceness and delicacy of some of their works, and the magnificence of others; but these may be accounted for by the extreme attention and unwearied patience employed by them.

The weaver early in the morning sets up his loom under the shade of a tree, and takes it down in the evening. The fine muslins are indeed woven within doors, the thread being too delicate to support the agitation of the air; but it is not uncommon to see near manufacturing villages, some of those stately groves with which India abounds, full of looms, employed in weaving the coarser cloths.

The silversmith sometimes works for daily hire, and then brings his whole apparatus to the house of the person who em-

ploys him. He will imitate any thing that may be given to him; and some of their works in filigree are extremely delicate and curious.

The utensils of all the artisans and manufacturers partake of the same kind of simplicity.

Lacquering and gilding must have been long known to the Hindūs, and employed by them in various works of luxury and ornament. We find them in use all over India, China, and Japan; though, in some parts, the lacquering is in a greater degree of perfection than in others.*

In the towns and villages, not only every cast, but each class of artisans and manu-

---

* Bernier, speaking of the Cashmirians, says: "Ils font des Palckys, des bois de lit, des coffres, des écritoires, des cassettes, des cuillers, et plusieurs autres sortes de petits ouvrages, qui ont une beauté toute particulière, et qui se distribuent par toutes les Indes. Ils savent y donner un vernis, et suivre et contrefaire si adroitement les veines d'un certain bois, qui en a de fort belles, y appliquant des filets d'or, qu'il n'y a rien de plus beau."—*Voyages de Bernier*.

facturers, has its own particular quarter for residence. The Chandalas, and all judged to be unclean by having been expelled from their casts, live in a quarter entirely separate from any other, nor dare they even pass through the streets that are inhabited by any of the pure casts.

Rice is the principal article of nourishment of all the natives; and the first object of attention in the cultivation of it, is to have the soil plentifully supplied with water. If there be a scarcity of water, the harvest is scanty in proportion to it, and deficiency of rain at its usual season may produce a famine. In travelling through Hindūstān, some opinion may be formed of the wisdom and benignity of the government, by the number, and state of preservation, of the tanks and water-courses.

The Hindūs, far from labouring to make proselytes to their religion, do not admit into it those who had been born in and professed any other faith. They say, that provided men perform their moral duties, in

abstaining from ill, and doing good to the utmost of their ability, it is but of little importance under what forms they worship God. That things suitable to one people may be unfit for another, and that to suppose that God prefers any one particular religion to the exclusion of others, and yet leaves numbers of his creatures ignorant of his will, is to accuse him of injustice, or question his omnipotence.*

* For further particulars in regard to the manners and customs of the Hindūs, as well as their religious ceremonies, we refer the reader to the work of Mr. Ward, already quoted, published in four volumes 4to. at Serampore in Bengal, 1811;—and also to that of Mr. Solvyns, begun to be published at Paris in 1808 in French and English, intituled, "Les Hindous; ou Description de leurs Mœurs, Coutumes, et Cérémonies. But we cannot help expressing a wish that Mr. Ward had, in the orthography of the names of places and persons, followed that of some of those celebrated authors who preceded him, adding afterwards, if he chose to do so, the orthography which he conceived to correspond more exactly with the original language. From not observing this rule, it would be difficult sometimes to conceive what place or person was meant, unless led to

it by preparatory circumstances; for example, when speaking of the famous temple in Orixa, written by Orme, &c. Jagarnaut, he writes *Jŭgŭanat-hu-Khsatra*, and that of Jambukishna on the island of Seringham, in the vicinity of Trichinopoly, he writes *Koombhŭkonoŭ*.

CHAPTER XI.

ON THE LANGUAGES OF INDIA.

In an Essay on the Languages of India, by Mr. H. T. Colebrooke,* he observes, that, in a treatise on rhetoric composed for the use of Manicya Chandra, Rajah of Tirhut, a brief enumeration of the languages used by the poets, is quoted from two authors on the art of poetry, in which they speak of the Sanscrita, Prācrita, Paisachi, and Māgadhi;—That the Paisachi seems to be a jargon which dramatic writers make use of in some low characters, but in reality, that only three languages are mentioned as such, namely, the Sanscrita, Prācrita and Māgadhi;—That the Sanscrita is

* Asiatic Researches, vol. vii. p. 199.

a most polished language, the inflexions of which, with all its numerous anomalies, are taught in grammatical institutes:—That the Prācrita is composed of what may be called provincial dialects, which are less refined and have a more imperfect grammar; that the Māgadhi, or Apabhrans'a, spoken by the vulgar, is destitute of regular rules; and that the languages used by the Hindūs in general, proceed from the three we have mentioned. In every part of that immense country, Sanscrit words are to be found in use, and all the names of ancient places are derived from it. This language continues to be cultivated by the learned Hindūs, as the language of science and literature; and is the repository of their laws, civil and religious. "It evidently derives its origin from a primeval tongue, which has been gradually refined, and some steps of its progress may even now be traced." Like some other ancient languages it abounds in inflexions, but which, the author says, are more anomalous in it than in any other language he is acquainted

with, and among which he alludes to the Greek and Persian. It is now become what is termed a dead language, only known to those who may have particularly studied it, though it is probable that it was once almost in universal use throughout India.

"The exquisitely refined system by which the grammar of Sanscrit is taught, has been mistaken for the refinement of the language itself. The rules have been supposed to be anterior to the practice, but this supposition is gratuitous. In Sanscrit, as in every other known tongue, grammarians have not invented etymology, but have only contrived rules to teach what was already established by approved practice. There is one peculiarity of Sanscrit compositions, which may also have suggested the opinion that it could never be a spoken language. I allude to what might be termed the euphonical orthography of Sanscrit. It consists in extending to syntax the rules for the permutation of letters in etymology. Similar rules for

avoiding incompatible sounds in compound terms exist in all languages; this is sometimes effected by a deviation from orthography in the pronunciation of words, sometimes by altering one or more letters to make the spelling correspond with the pronunciation. These rules have been more profoundly investigated by Hindū grammarians than by those of any other nation, and they have completed a system of orthography which may be justly termed euphonical. They require all compound terms to be reduced to this standard."—Sanscrit authors delight in compounds, some of them of an inordinate length, but "in common speech this could never have been practised. None but well known compounds would be used by any speaker who wished to be understood; such, indeed, is the present practice of those who still speak the Sanscrit language, and who deliver themselves with such fluency as is sufficient to prove that Sanscrit may in former times have been spoken with facility."

"Panini, the father of Sanscrit gram-

mar,* lived in so remote an age, that he ranks among those ancient sages whose fabulous history occupies a conspicuous place in the Puranas, or Indian theogonies.† The name is a patronymic, indicating his descent from Panin; but according to the Pauranic legends, he was grandson of Dévala, an inspired legislator. Whatever may be the true history of Panini, to him the Sutras, or succinct aphorisms of grammar, are attributed by universal consent. His system is grounded on a profound investigation of the analogies in both the regular

---

* A copy of the grammar of Panini, in the Devanagari character, is among the Sanscrit Manuscripts that were presented to the Royal Society of London by the late Sir William Jones.

† "Every Purana treats of five subjects: the creation of the universe, its progress, and the renovation of worlds; the genealogy of gods and heroes; chronology, according to a fabulous system; and heroic history, containing the achievements of demi-gods and heroes. Since each Purana contains a cosmogony, with mythological and heroic history, the works which bear that title may not unaptly be compared to the Grecian Theogonies."

and the anomalous inflexions of the Sanscrit language. He has combined those analogies in a very artificial manner; and has thus compressed a most copious etymology into a very narrow compass. His precepts are, indeed, numerous, but they have been framed with the utmost conciseness; and this great brevity is the result of very ingenious methods which have been contrived for this end, and for the purpose of assisting the student's memory. In Panini's system the mutual relation of all the parts, denotes, that it must have been completed by its author; it certainly bears internal evidence of its having been accomplished by a single effort, and even the corrections, which are needed, cannot be interwoven with the text. It must not be hence inferred, that Panini was unaided by the labours of earlier grammarians; in many of his precepts he cites the authority of his predecessors,* sometimes for a devi-

* "Sacalya, Gargya, Casyapa, Galava, Sacatayana, and others."

ation from a general rule, often for a grammatical canon which has universal cogency. He has even employed some technical terms without defining them; because, as his commentators remark, those terms were already introduced by earlier grammarians.* None of the more ancient works, however, seem to be now extant; being superseded by his, they have probably been disused for ages, and are now perhaps totally lost.

" A performance such as the Paniniya grammar, must inevitably contain many errors. The task of correcting its inaccuracies has been executed by Catyayana, an inspired Saint and Law-giver; whose history, like that of all the Indian sages, is involved in the impenetrable darkness of mythology. His annotations, entitled Varticas, restrict those among the Paniniya rules which are too vague, enlarge others which are too limited, and mark numerous

* " In a few instances he quotes former grammars to refute them."

exceptions which had escaped the notice of Panini himself." The studied brevity of Panini rendered him often obscure, which led to numerous commentaries, some of which are mentioned by Mr. Colebrooke. One of them, a most voluminous work, known now by the title of Mahābhāshya, or the great commentary, "is ascribed to Patanjali,* a fabulous personage, to whom mythology has assigned the shape of a serpent.† In this commentary every rule is examined at great length. All possible interpretations are proposed; and the true sense and import of the rule are deduced through a tedious train of argument, in which all possible objections are considered and refuted; and the wrong interpretations of the text, with all the arguments which

---

* Copies of two commentaries, one, that of Patanjali, the other by Catyayana, are also among the manuscripts presented to the Royal Society as above mentioned.

† The serpent in India, as with the Egyptians, Greeks, &c. is one of the symbols of wisdom and science.

can be invented to support them, are obviated or exploded."

"Voluminous as it is, the Mahābhāshya has not exhausted the subject on which it treats. Its deficiencies have been supplied by the annotations of modern grammarians. The most celebrated amongst these scholiasts of the Bhashya, is Caiyata, a learned Cashmirian. His annotations are almost equally copious with the commentary itself. Yet they too are loaded by numerous glosses; among which the old and new Vivaranas are most esteemed." Besides this, several other commentators exercised their ingenuity in explaining the Mahābhāshya. "Such vast works as the Mahābhāshya and its scholia, with the voluminous annotations on the catalogue of verbs, are not adapted for general instruction. A more concise commentary must have been always requisite. The best that is now extant is entitled the *Casica Vritti*, or commentary composed at Varanasi. The anonymous author of it, in a short

preface, explains his design: '*to gather the essence of a science dispersed in the early commentaries, in the Bhashya, in copious dictionaries of verbs and of nouns, and in other works.*' He has well fulfilled the task which he undertook. His gloss explains in perspicuous language the meaning and application of each rule: he adds examples, and quotes, in their proper places, the necessary emendations from the Varticas and Bhashya. Though he never deviates into frivolous disquisitions, nor into tedious reasoning, but expounds the text as succinctly as is consistent with perspicuity, his work is nevertheless voluminous; and yet, copious as it is, the commentaries on it, and the annotations on its commentaries, are still more voluminous. Amongst the most celebrated is the Padamanjari of Harádatta Misra; a grammarian whose authority is respected almost equally with that of the author, on whose text he comments. The annotators on this again are numerous; but it would be useless to insert a long list

of their names, or of the titles of their works.

"Excellent as the Casica Vritti undoubtedly is, it partakes of the defects which have been imputed to Panini's text. Following the same order, in which the original rules are arranged, it is well adapted to assist the student in acquiring a critical knowledge of the Sanscrit tongue; but for one who studies the rudiments of the language, a different arrangement is requisite, for the sake of bringing into one view the rules which must be remembered in the inflexions of one word, and those which must be combined even for a single variation of a single term. Such a grammar has been compiled within a few centuries past by Ramachandra, an eminent grammarian. It is entitled Pracriyacaumudi. The rules are Panini's, and the explanation of them is abridged from the ancient commentaries; but the arrangement is wholly different. It proceeds from the elements of writing to definitions; thence to orthography: it af-

terwards exhibits the inflexions of nouns according to case, number, and gender; notices the indeclinables, and proceeds to the uses of the cases: it subjoins the rules of opposition, by which compound terms are formed; the etymology of patronymics and other derivatives from nouns; and the reduplication of particles, &c. In the second part, it treats of the conjugation of verbs arranged in ten classes: to these primitives succeed derivative verbs, formed from verbal roots, or from nouns. The rules concerning different voices follow: they are succeeded by precepts regarding the use of the tenses; and the work concludes with the etymology of verbal nouns, gerunds, supines, and participles. A supplement to it contains the anomalies of the dialect, in which the Veda is composed."

The Hindūs delight in scholastic disputation. Their grammarians indulge this propensity as much as their lawyers and their sophists. Bhattoji Dicshita has provided an ample store of controversy in an argumentative commentary on his own

grammar. This work is entitled, *Pranta menorama.* He also composed a very voluminous commentary on the eight lectures of Panini, and gave it the title of *Sabda Caustubha.*"

"The best and most esteemed vocabulary is the *Amera cosha.** The bigotry of Sancar Acharya spared this, when he proscribed the other works of Amera Sinha. Like most other Sanscrit dictionaries, it is arranged in verse, to aid the memory. Synonymous words are collected into one or more verses, and placed in fifteen different chapters, which treat of as many different subjects. The *sixteenth*† contains a few homonymous terms, arranged alphabetically in the Indian manner by the final consonants. The seventeenth chapter is a pretty full catalogue of indeclinables, which

---

* The Treasure of Amera. This book was printed at Serampore, in 1808, with an English interpretation and annotations by H. T. Colebrooke.

† See the fourth chapter of the third book of the Serampore edition.

European philologists would call adverbs, prepositions, conjunctions, and interjections; but which Sanscrit grammarians consider as indeclinable nouns. The last chapter of the Amera cosha, is a treatise on the gender of nouns. Another vocabulary by the same author is often cited by his commentators, under the title of Ameramala. Numerous commentaries have been written on the Amera cosha. The chief object of them is to explain the derivations of the nouns, and to supply the principal deficiencies of the text."

"The *Amera cosha,* gives a very incomplete list of words that have various acceptations. This defect is well supplied by the Medini, a dictionary so named from its author Medinicar. It contains words that bear many senses, arranged in alphabetical order by the final consonants; and a list of homonymous indeclinables is subjoined to it. A similar dictionary, compiled by Maheswara, and entitled Viswapracasa,* is

* See Jones's Oriental MSS. No. 44, and the Manu-

much consulted, though it be very defective, as has been justly remarked by Medinicar. It contains, however, a very useful appendix on words spelt more than one way; and another, on letters which are liable to be confounded, such as *v* and *b*; and another again, on the gender of nouns. These subjects are not separately treated by Medinicar; but he has on the other hand specified the genders with great care in the body of the work."

"Amera's dictionary does not contain more than ten thousand different words. Yet the Sanscrit language is very copious. The insertion of derivatives, that do not at all deviate from their regular and obvious import, has been very properly deemed superfluous. Compound epithets, and

---

scripts in the Royal Library at Paris, No. cii.—See also the Catalogue of Sanscrit Manuscripts in that Library, by Messieurs Alexander Hamilton, (Member of the Asiatic Society at Calcutta, and now Professor at the East India College in Hertfordshire) and L. Langlès, (Member *of the Institute of France*, and keeper of the Oriental Manuscripts in the Royal Library,) p. 78.

other compound terms, in which the Sanscrit language is peculiarly rich, are likewise omitted; excepting such as are especially appropriated, by a limited acceptation, either as titles of deities, or as names of plants, animals, &c. In fact compound terms are formed at pleasure, according to the rules of grammar; and must generally be interpreted in strict conformity with those rules. Technical terms too are mostly excluded from general dictionaries, and consigned to separate nomenclatures. The Ameracosh then is less defective than might be inferred from the small number of words explained in it. Still, however, it needs a supplement. The Haravali may be used as such. It is a vocabulary of uncommon words, compiled by Purushottama, the author of an etymological work, and also of a little collection of monograms, entitled Ecacshara."

"The remaining deficiencies of the Ameracosh are supplied by consulting other dictionaries and vocabularies; such as Helayudha's, Vachespati's, the Dharanicosha,

or some other. Sanscrit dictionaries are indeed very numerous."—The learned author of this article, after mentioning several of them, adds: "the school of Benares now uses the *Siddhanta caumudi*, and other works of Bhattoji, as the same school formerly did the *Casica Vritti.** The *Pracriya caumudi*, with its commentaries, maintains its ground among the learned of Mithila, or Tirhut. In both places, however, and indeed throughout India, the Mahābhāshya continues to be the standard of Sanscrit grammar. It is therefore studied by all who are ambitious of acquiring a critical knowledge of the language."†

* This grammatical treatise was printed at Serampore, in 1811, with Devanagari types, but without translation or notes.

† On referring to the article in the *Asiatic Researches*, (vol. iv. p. 199, et. seq.) whence the preceding extract is taken, the reader will find many of these and other works on language mentioned and explained.

A printing press has been established at Calcutta, for the purpose of printing works in the Indian and Oriental languages in general. The printing Sanscrit, and

From what has been hinted respecting the proscription of the works of Amera Sinha, author of the Amera-cosha, it may be expected that the cause of that proscrip-

other Hindū languages, was committed to the care of learned Pundits, who were furnished with complete founts of Deva-Nagari types in different sizes. Early in 1808, a Sanscrit Dictionary, composed from the best authorities, was printed. It contains the etymology of terms, with an interpretation of them, together with examples from classical writers; and afterwards another Dictionary in Sanscrit and English was composed, the Sanscrit after the text of the Amera Cosha, the English, an exact translation of it, with notes; both by Mr. Colebrooke.*

At the College of Calcutta the Sanscrit is studied as the Hebrew, Greek, and Latin, in the Colleges of Europe; the Mahratta, Hindūstanee, Bengalee, Persian, and Arabic, as the languages still in use. Disputations are held in all these; discourses are pronounced in them, and prizes annually bestowed on those, who may have been judged to have merited them. This noble and useful institution was originally instituted by the Marquis of Wellesley, when he was governor-general of India; and we earnestly hope that it will continue to be liberally supported and encouraged.

* See discourse of the Governor-General, Lord Minto, to the College of Calcutta, 2d March, 1808.

tion should be explained. It appears that he was an eminent poet, and one of nine who were called the gems of the court of Vicramaditya. " Unfortunately, Amera held the tenets of a heterodox sect; and his poems are said to have perished in the persecutions fomented by intolerant philosophers* against the persons and writings of both the Jainas and Bauddhas."†

We understand that most of the alphabets of India, though they differ in the shape of their letters, agree in their numbers, powers, and systematical disposition, and are capable of expressing the Sanscrit as well as their own particular language; but the ancient writings, we believe, are chiefly in the character called Déva-nagari, so named by way of pre-eminence.‡

---

* Instead of philosophers we presume priests are meant.

† See a farther account of this circumstance, in a note to Asiat. Res. vol. vii. p. 214.

‡ See Catalogue of Sanscrit manuscripts presented to the Royal Society of London. (Sir W. Jones's Works, vol. xiii. p. 401, and seq.) The reader, on referring to

It affords much curious reflection, when we consider that the Sanscrit language must have existed in the copious and refined state that has been described, at a period so very remote from us. The nice and intimate knowledge which Sir William Jones possessed of the Greek and Latin languages and literature, is universally allowed by those who knew him, and who were competent to judge of the subject. His knowledge and taste as a scholar, were celebrated at Oxford, even in the early part of

---

that catalogue, may obtain much curious information. Examples will be found of several species of Indian literature. The manuscript No. 50, intituled Hasyarnava, or the sea of laughter, is a farce, by a poet named Jagadiswara: *it is*, says Jones, *a bitter satire on kings and their servants, and on priests, who are represented as vicious hypocrites*. To have written thus freely upon such very nice subjects, and especially to produce them on the stage, announces a degree of toleration that we should not have expected to have met with.—In a note on a poem in the Devanagari character, entitled Vrihatcatha, by an author named Somadeva, Sir Wm. Jones observes: "This poet resembles Ariosto, but even surpasses him in eloquence."

his life.—We have had occasion to observe, that the Sanscrit language had become as easy and familiar to him as either of the two other languages we have here mentioned; and, when speaking of the Sanscrit, he observes, "Whatever be its antiquity, it is of a wonderful structure; more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either, yet bearing to both of them a strong affinity both in the roots of verbs, and in the forms of grammar."—In his preface to the translation of the Sanscrit drama, named Sacontala, or the Fatal Ring, by the poet Calidasa, he further remarks: "I began with translating it verbally into Latin, which bears so great resemblance to the Sanscrit, that it is more convenient than any other modern language for a scrupulous interlineary version. I then turned it into English.

Mr. Halhed, in his preface to his translation of the Code of Hindū Laws, observes that the Sanscrit is at the same time copious and nervous, that it far exceeds the

Greek and Arabic in the regularity of its etymology, and that the style of the best authors in it, is wonderfully concise. And in the preface to his Grammar of the Bengal language, published in 1778, he adds: "The grand source of Indian literature, the parent of almost every dialect, from the Persian gulph to the China seas, is the Sanscrit; a language of the most venerable and unfathomable antiquity; which, although at present shut up in the libraries of Brahmins, and appropriated solely to the records of their religion, appears to have been current over most of the oriental world; and traces of its original extent may still be discovered in almost every district of Asia. I have been astonished to find the similitude of Sanscrit words with those of Persian and Arabic, and even of Latin and Greek: and these not in technical and metaphorical terms, which the mutuation of refined arts and improved manners might have occasionally introduced; but in the main ground-work of language, in monosyllables, in the names of numbers, and the

appellations of such things as would be first discriminated on the immediate dawn of civilization. The resemblance which may be observed in the characters upon the medals and signets of various districts of Asia, the light which they reciprocally reflect upon each other, and the general analogy which they all bear to the same grand prototype, afford another ample field for curiosity. The coins of Assam, Nepaul, Cashmire, and many other kingdoms, are all stamped with Sanscrit letters, and mostly contain allusions to the old Sanscrit mythology:* the same conformity I have observed on the impressions of seals from Boutan and Tibet. A collateral inference may likewise be deduced from the peculiar arrangement of the Sanscrit alphabet, so very different from that of any other quar-

* What Mr. Halhed observes, in regard to coins, does not ascertain the antiquity of money in Asia; coins may undoubtedly be found with Sanscrit inscriptions on them, and now intitled to be called ancient, though probably of dates subsequent to the first use of money with the Greeks.

ter of the world. This extraordinary mode of combination still exists in the greatest part of the east, from the Indus to Pegu, in dialects now apparently unconnected, and in characters completely dissimilar; but is a forcible argument that they are all derived from the same source. Another channel of speculation presents itself in the names of persons and places, of titles and dignities, which are open to general notice, and in which, to the farthest limits of Asia, may be found manifest traces of the Sanscrit."*

"Dramatic poetry must have been immemorially ancient in the Indian empire: the invention of it is commonly ascribed to Bheret, a sage, believed to have been inspired, who invented also a system of music, which bears his name; but this opinion of its origin is rendered very doubtful by the universal belief, that the first Sanscrit verse, ever heard by mortals, was pronounced in a burst of resentment by the great Valmic;

* Halhed's Gram. of the Bengal Lang. Pref. p. iii. iv.

who flourished in the silver age of the world, and was author of the epic poem on the war of his contemporary, Rama, king of Ayodhyà."

"A modern epigram was lately repeated to me, which does so much honour to the author of Sacontalá, that I cannot forbear exhibiting a literal version of it: *Poetry was the sportful daughter of Valmic, and, having been educated by Vyasa, she chose Calidas for her bridegroom, after the manner of Viderbha: she was the mother of Amara, Sundar, Sánc'ha, Dhanic; but now, old and decrepit, her beauty faded, and her unadorned feet slipping as she walks, in whose cottage does she disdain to take shelter?*"

"All the other works of this illustrious poet, the Shakspeare of India, that have yet come to my knowledge, are a second play, in five acts, entitled *Urvasi*;* an

---

* Urvasi Vicrama, or the Heroism of Urvasi, is to be found in the Royal Library at Paris, No. 85.—In the Catalogue of Sanscrit Manuscripts, above referred to, it is said: "Ourvâsi Vikrama (l'Heroisme d'Ourvâsi,) pöeme Samskrit, par Kâlidâsa, en Samskrit et en Pra-

heroic poem, or rather a series of poems in one book, on the Children of the Sun; another, with perfect unity of action, on the Birth of Cumara, god of war; two or three love tales in verse; and an excellent little work on Sanscrit Metre, precisely in the manner of Terentianus;* but he is believed by some to have revised the works of Valmic and Vyasa, and to have corrected the perfect editions of them which are now current: this at least is admitted by all, that he stands next in reputation to those venerable bards; and we must regret, that he has left only two dramatic poems, especially as the stories in his Raghuvansa would have supplied him with a number of excellent subjects.—Some of his contemporaries, and other Hindū poets, even to our own times, have composed so many tragedies, comedies, farces, and musical pieces,

krit. C'est une suite de pöeme sur les enfans du soleil, en forme de dialogues, ce qui fait une espèce de drame en cinq actes."

* Terentianus Maurus was the author of a poem, "De literis, syllabis, pedibus, et metris."

that the Indian theatre would fill as many volumes as that of any nation in ancient or modern Europe: all the Pandits assert that their plays are innumerable; and, on my first inquiries concerning them, I had notice of more than thirty, which they consider as the flower of their Natacs; among which, the Malignant Child, the Rape of Usha, the Taming of Durvasas, the Seizure of the Lock, Malati and Madhava, with five or six dramas on the adventures of their incarnate gods, are the most admired after those of Calidas. They are in verse, where the dialogue is elevated; and in prose, where it is familiar; the men of rank and learning are represented speaking pure Sanscrit, and the women Pracrit, which is little more than the language of the Brahmins melted down by a delicate articulation to the softness of Italian; while the low persons of the drama speak the vulgar dialects of the several provinces which they are supposed to inhabit.

"The play of Sacontalá must have been very popular when it was first represented;

for the Indian empire was then in full vigour, and the national vanity must have been highly flattered by the magnificent introduction of those kings and heroes in whom the Hindūs gloried; the scenery must have been splendid and beautiful; and there is good reason to believe, that the court at Avanti* was equal in brilliancy during the reign of Vicramaditya, to that of any monarch in any age or country. Dushmanta, the hero of the piece, appears in the chronological tables of the Brahmins among the children of the moon, and in the twenty-first generation after the flood; so that, if we can at all rely on the chronology of the Hindūs, he was nearly contemporary with Obed, or Jesse; and Puru, his most celebrated ancestor, was the fifth in descent from Buddha, or Mercury, who married, they say, a daughter of the pious king, whom Vishnu preserved in an ark from the universal deluge: his eldest son Bheret was the illustrious progenitor of

* Now named Oujein, see p. 3 of this volume.

Curu, from whom Pándu was lineally descended, and in whose family the Indian Apollo became incarnate; whence the poem, next in fame to the Ramayan, is called Mahabharat."*

"The Pracrita, or second class of Indian languages," (says Mr. Colebrooke) "comprehends the written dialects which are now used in the intercourse of civil life, and which are cultivated by lettered men. The author of a passage already quoted, includes all such dialects under the general denomination of Pracrit: but this term is commonly restricted to one language, namely to the *Saraswati bala bani*, or the speech of children on the banks of the Saraswati, or youthful speech of Saraswati. There is reason to believe that ten polished dialects formerly prevailed in as many different civilized nations, who occupied all the fertile provinces of Hindūstān and the Dekhan. Evident traces of them still exist. They shall be noticed in the order

* Works of Sir W. Jones, vol. ix. p. 367, et seq.

in which these Hindū nations are usually enumerated."

"The Sareswata was a nation which occupied the banks of the river Saraswati. Brahmanas, who are still distinguished by the name of their nation, inhabit chiefly the Panjab or Panchanada, west of the river from which they take their appellation. Their original language may have once prevailed through the southern and western parts of Hindūstān proper, and is probably the idiom to which the name of Pracrit is generally appropriated. This has been more cultivated than any other among the dialects which will be here enumerated, and it occupies a principal place in the dialogue of most dramas. Many beautiful poems composed wholly in this language, or intermixed with stanzas of pure Sanscrit, have perpetuated the memory of it, though perhaps it may have long ceased to be a vernacular tongue. Grammars have been compiled for the purpose of teaching this language and its prosody, and several treatises of rhetoric have

been written to illustrate its beauties.' The Pracrita Manorama and Pracrita Pingala are instances of the one, and the Saraswati Cantabharana of Bhojadeva, may be named as an example of the other, although both Sanscrit and Pracrit idioms furnish the examples with which that author elucidates his precepts."

"The Canyacubjas possessed a great empire, the metropolis of which was the ancient city of Canyacubja or Canoge. Theirs seems to be the language which forms the ground-work of modern Hindūstanee, and which is known by the appellation of Hindi or Hindevi. Two dialects of it may be easily distinguished, one more refined, the other less so. To this last the name of Hindi is sometimes restricted, while the other is often confounded with Pracrit. Numerous poems have been composed in both dialects, not only before the Hindūstanee was ingrafted on the Hindi by a large intermixture of Persian, but also in very modern times, by Mohammedan as well as Hindū poets On examination,

the affinity of Hindi with the Sanscrit language is peculiarly striking; and no person acquainted with both can hesitate in affirming that Hindi is chiefly borrowed from Sanscrit. Many words, the etymology of which shews them to be the purest Sanscrit, are received unaltered; many more undergo no change but that of making the final vowel silent; a still greater number exhibits no other difference than what arises from the uniform permutation of certain letters; the rest too, with comparatively few exceptions, may be easily traced to a Sanscrit origin. Pracrit and Hindi books are commonly written in the Devanagari; but a corrupt writing, called Nagari, is used by Hindūs in all common transactions where Hindi is employed by them; and a still more corrupted one, wherein vowels are for the most part omitted, is employed by bankers and others in mercantile transactions."

"Gaura, or, as it is commonly called, Bengalah, or Bengali, is the language spoken in the provinces, of which the an-

cient city of Gaur was once the capital; it still prevails in all the provinces of Bengal, excepting, perhaps, some frontier districts; but is said to be spoken in its greatest purity in the eastern parts only; and, as there spoken, contains few words which are not evidently derived from Sanscrit. This dialect has not been neglected by learned men. Many Sanscrit poems have been translated, and some original poems have been composed in it: learned Hindūs, in Bengal, speak it almost exclusively; verbal instruction in sciences is communicated through this medium, and even public disputations are conducted in this dialect. Instead of writing it in the Devanagari, as the Pracrit and Hindevi are written, the inhabitants of Bengal have adopted a peculiar character, which is nothing else but Devanagari, deformed for the sake of expeditious writing. Even the learned amongst them employ this character for the Sanscrit language, the pronunciation of which too they in like manner degrade to the Bengali standard.—Although Gaura be

the name of Bengal, yet the Brahmanas, who bear that appellation, are not inhabitants of Bengal but of Hindūstān proper. They reside chiefly in the Suba of Delhi; while the Brahmanas of Bengal are avowed colonists from Canoj. It is difficult to account for this contradiction. The Gaura Brahmanas allege a tradition, that their ancestors migrated in the days of the Pandavas, at the commencement of the present Cali Yuga."*

"Maithila, or Tirhutiya, is the language used in Mithila, that is, in the Sircar of Tirhut, and in some adjoining districts, limited however by the rivers Cusi and

---

* "Great affinity appears between the manners and practices of the Brahminas and those Gymnosophists of Ethiopia, who settled near the sources of the Nile; and, according to Philostrates, they were descended from the Brahmins. He says, the Gymnosophists of Ethiopia came from India, having been driven from thence for the murder of their king near the Ganges."—*Philost. Vit. Apol.* c. 6.—"Sketches of the Hindūs," by the author of the present work, vol. i. Sketch x. p. 255.

Gandhac, and by the mountains of Nepal: it has great affinity with Bengali; and the character in which it is written differs little from that which is employed throughout Bengal. In Tirhut too, the learned write Sanscrit in the Tirhutiya character, and pronounce it after their own inelegant manner. The dialect of Mithila has no extensive use, and does not appear to have been at any time cultivated by elegant poets."

"Utcala, or Odradesa, is co-extensive with the Suba of Oresa, extending from Medinipur to Manacapattana, and from the sea to Sammall-pur. The language of this province, and the character in which it is written, are both called Uriya.* So far as a judgment can be formed from imperfect specimens of this language, it contains many Sanscrit words variously corrupted."

"The five Hindū nations, whose pecu-

* From the name of the province of Orisa, or as it is generally called, Orixa.

liar dialects have been thus briefly noticed, occupy the northern and eastern portions of India; they are denominated the five Gaurs. The rest, called the five Dravirs; inhabit the southern and western parts of the peninsula. Some Pandits indeed exclude Carnata, and substitute Casmira; but others, with more propriety, omit the Cashmirian tribe; and, by adding the Canaras to the list of Dravirs, avoid the inconsistency of placing a northern tribe among southern nations. There is reason too for doubting whether Cashmira be occupied by a distinct nation, and whether the inhabitants of it be not rather a tribe of Canyacubjas.

"Dravira is the country which terminates the peninsula of India. Its northern limits appear to lie between the twelfth and thirteenth degrees of north latitude. The language of the province is the Tamul, to which Europeans have given the name of Malabar, from Malay-war, a province of Dravira. They have similarly corrupted the true name of the dialect into Tamul,

Tamulic, and Tamulian:* but the word, as pronounced by the natives, is Tamla, or Tamalah; and this seems to indicate a derivation from Tamra, or Tamraparni, a river of note, which waters the southern Mathura, situated within the limits of Dravir. The provincial dialect is written in a character which is greatly corrupted from the parent Devanagari, but which nevertheless is used by the Brahmins of Dravir in writing the Sanscrit language. After carefully inspecting a grammar published by Mr. Drummond at Bombay, and a dictionary by the missionaries at Madras, I can venture to pronounce that the Tamla contains many Sanscrit words, either unaltered or little changed, with others more corrupted, and a still greater number of doubtful origin.

* "The Romish and Protestant missionaries, who have published dictionaries and grammars of this dialect, refer to another language, which they denominate *Grandam*, and *Grandonicum*. It appears that Sanscrit is meant, and the term thus corrupted by them is, *Grant'ha*, a volume or book."

"The Maharashtra, or Mahratta, is the language of a nation which has in the present century* greatly enlarged its ancient limits. If any inference may be drawn from the name of the character in which the language is written, the country occupied by this people was formerly called Muru; for the peculiar corruption of the Devanagari, which is employed by the Maharashtras in common transactions, is denominated by them *Mur*. Their books, it must be remarked, are commonly written in Devanagari. The Mahratta nation was formerly confined to a mountainous tract, situated south of the river Nermada, and extending to the province of Cocan. Their language is now more widely spread, but is not yet become the vernacular dialect of provinces situated far beyond the ancient bounds of their country. Like other Indian tongues, it contains much pure Sanscrit.†

* Meaning the 18th century.

† See grammar and dictionary of the Mahratta lan-

"Carnata, or Carnara, is the ancient language of Carnataca, a province which has given name to districts on both coasts of the peninsula. This dialect still prevails in the intermediate mountainous tract, but seems to be superseded by other provincial tongues on the eastern coast. A peculiar character, formed from the Devanágari, but like the Tamla, much corrupted from it through the practice of writing on palm-leaves with an iron style, is called by the same name with the language of Carnatic.

Tailanga, Télingáh, or Tilanga, is at once the name of a nation, of its language, and of the character in which that language is written. Though the province of Telingana alone retain the name in the published maps of India, yet the adjacent provinces on either bank of Crishna and Godaveri, and those situated on the north-eastern coast of the peninsula, are undoubtedly comprehended within the ancient limits of Tilanga,

---

guage, published at Serampore in Bengal, by Dr. Carey.

and are inhabited chiefly by people of this tribe. The language too is widely spread: and many circumstances indicate that the Tailangas formerly occupied a very extensive tract, in which they still constitute the principal part of the population. The character, in which they write their own language, is taken from Devanagari, and the Tailanga Brahmins employ it in writing the Sanscrit tongue, from which the Tailanga idiom is said to have borrowed more largely than other dialects used in the south of India. This language appears to have been cultivated by poets, if not by prose writers, for the Tailangas possess many compositions in their own provincial dialect, some of which are said to record the ancient history of the country."

"The people of Gurjara, or Guzerat, use a language, named from the country Gurjura, which is nearly allied to the Hindi, while the character in which it is written conforms almost exactly with the vulgar Nagari. The limits of Gurjara, or as it is found named by some European au-

thors, the *kingdom of Guzerat*, is supposed anciently to have included Candesh and Malwa.*

In the languages denominated Magadhi and Apabhransa,† "are comprehended all those dialects which are generally known by the common appellation of Bhasha, or *speech*. This term, as employed by all philologists, from Panini down to the present professors of grammar, does, indeed, signify the popular dialect of Sanscrit, in contradistinction to the obsolete dialect of the Veda; but in common acceptation, Bhasha denotes any of the modern vernacular dialects of India, especially such as are corrupted from the Sanscrit: these are very numerous.‡

---

* With respect to the modern geography of India, we have in general adhered to the Map and Memoir of Rennell, except in a few instances where some late surveys differ from him in regard to the exact latitude and longitude, though these differences are not material.

† See p. 161, of this volume.

‡ Asiat. Res. vol. vii. p. 199, et seq. Art. by Mr. H. T. Colebrooke.

In a future article,* on Sanscrit and Pracrit poetry, Mr. Colebrooke gives numerous examples of it from different authors, to which he adds Synoptical Tables. In this article he says, the Sanscrit will be found in prosody to be richer than any other known language: in variations of metre to be regulated either by quantity or by number of syllables, both with and without rhyme, and subject to laws imposing, in some instances, rigid restrictions, in others, allowing ample latitude.

The tenth volume of the Asiatic Researches, contains an Essay on the *Literature and Languages of the Indo-Chinese Nations*, by Dr. J. Leyden. By Indo-Chinese nations, Dr. Leyden means the countries situated between the peninsula of India and China, including, besides those on the continent, the various islands that are interspersed in the eastern seas. The erudition displayed by the author, and his extensive knowledge of philology, seem to

* Asiat. Res. vol. x. p. 389.

have rendered him peculiarly adapted to this inquiry.* His materials for it, he observes, were principally collected during a voyage he undertook for the benefit of his health, during which he resided some time at the island of Penang, visited the Malayan coast, and Achin and other places on the island of Sumatra. In the *Indo-Chinese* countries, the people inhabiting the peninsula of Malacca, and the coasts of the various islands, generally profess the

* "An attentive consideration of the languages spoken by the civilized nations of the old continent, enabled Sir William Jones to trace the whole to three families, the Arabian, the Indian, and the Tartar. Many he determined with certainty, and with perfect conviction to himself and to his readers. These, we will venture to predict, every future inquiry will only serve to confirm. Others were confessedly deduced from probable grounds, and plausible conjectures: their validity remains to be confirmed or disproved by subsequent researches; and that eminent scholar would have been the first to applaud this able attempt to illustrate the subject, however it might militate against his preconceived opinions."—*Edinburgh Review for August*, 1810, vol. xvi. pp. 390, 391.

tenets of Mohammed, to which they were converted some ages ago, by adventurers from Arabia. All others, except some rude tribes of mountaineers, profess the Hindū religion, but adhere almost entirely to the tenets of Buddha. Dr. Leyden observes that this religion identifies itself in all its principal features, with that which prevails in Nepal, Butan, and Tibet, and has even extended itself over the immense regions of Chin, Cham, Japuen, China, Tartary, and Japan. It does not appear that all the nations, who occupy this extensive region, employ only one language for their sacred writings and laws as the Hindūs of the peninsula do; yet what he terms the *Indo-Chinese*, and also the inhabitants of Ceylon, uniformly employ for this purpose the Pali, or, as it is more generally named, the Bali language, and he observes that though the use of the Bali seems to be confined to religious and scientific subjects, it is nevertheless to be traced through all the spoken languages of the *Indo-Chinese* nations.

It appears that the Malays had a commer-

cial intercourse at a very remote period, with that part of the coast of India, now named by Europeans the *Northern Circars.** But the Javanese, from whom Dr. Leyden supposes the Malays to have received their first instruction in religion and learning, appear to have had an earlier and more ex-

---

* The Circars are the provinces named Cicacole, Rajahmundry, Ellore, Mustaphanagur, and Moortazanagur, or Guntour; and in them may also be included the districts of Masulipatam, extending along the coast between the provinces of Rajahmundry and Guntour. A branch of the river Krishna flows into the sea close to the fortress of Masulipatam; its principal mouth is about thirty miles to the south of that city. The low parts of the country between the branch and its parent stream, is, in the rainy season, sometimes entirely overflowed; the villages, which are purposely placed on rising spots, appearing on those occasions like islands rising above the water. Such inundations from great rivers are very frequent in India. The Gaudavery, when the river is full, washes the walls of the fort of Rajahmundry, a grand picturesque site; then proceeding in an easterly course, it disembogues itself into the sea at Narsapour, Yanam, and point Gaudavery. Both the Krishna and Gaudavery are considered as sacred rivers by the Hindûs.

tensive communication with India than the Malays. That maritime commerce was practised in India in very remote times appears evidently by that article in the laws of Menu, we have already mentioned, where, in limiting the interest of money to certain rates, an exception is made for money lent on bottomry.*

"The Malay language, and the more original languages of the eastern isles, seem in their formation, to have been polysyllabic like Sanscrit, Pali, and the spoken dialects of India. The modifications which these languages have received from a foreign source, seem for the most part, to have been effected, rather by the immediate agency of Sanscrit than of Pali; though the influence of this latter is not to be entirely excluded. But several of them have been a second time modified, by the introduction of Arabic," which became the language of religion and learning, of such as were converted to the Mohammedan

* See vol. i. p. 35, *supra*.

faith.—"These languages are all prodigiously varied by accentuation, like the spoken languages of China."*

"The Malayu language is obviously indebted to two foreign sources, for the majority of the vocables which compose it," namely, the Sanscrit in remote times, and afterwards the Arabic.†

"The connexion between the Sanscrit and Malayu was first remarked by Sir W. Jones; and Mr. Marsden has confirmed

---

* "The *Indo-Chinese* languages may be considered in the following order:

Polysyllabic languages.	Monosyllabic languages.
1. Malayu.	7. Rukheng.
2. Jawa.	8. Barma.
3. Bugis.	9. Mon.
4. Bima.	10. Thay.
5. Batta.	11. Khohmen.
6. Gala, or Tagala.	12. Law.
	13. Anam."

† "Je crois que la base du Malay est monosyllabique; en effet on y trouve un grand nombre de mots d'origine Chinoise; les mots Sanskrits et Arabes ont été introduits, à mesure que les Malais ont successivement adopté le Brahmanisme et l'Islamisme."—*Langlès.*

the fact, by about fifteen examples, selected, as he says, with little pains, from a Malay dictionary; which, had he been acquainted with the Sanscrit language, he might with very little labour, have extended to fifteen hundred, or, perhaps, five thousand. Many of the Sanscrit words in the Malayu, he observes, are such as the progress of civilization must soon have rendered necessary, being frequently expressive of mental feelings, or such modes of thinking as naturally result from the social habits of mankind, or from the evils which tend to interrupt them. Many of the names of the common objects of sensation are also of Sanscrit origin; nevertheless, the simplest part of the Malayu language, and that which is most indispensable to its existence as a distinct tongue, is certainly not derived from the Sanscrit."

"Marsden has mentioned a peculiarity, in which Arabic vocables, adopted by the Malayu, differ from adopted Sanscrit terms. While the Arabic words retain their peculiar and harsh pronunciation, those of San-

scrit origin are softened down, and assimilated with the rest of the language. This observation must likewise be taken with many limitations; for numerous words, of Arabic origin, are so completely assimilated to the Malayu pronunciation, that they are no longer capable of being recognized, even by a native Arab, unless by attention to their radicals."

"He has likewise hazarded an opinion, that the polish, which the Malayu has derived from Sanscrit, or Hinduvi, has been obtained immediately from the natives of Guzerat, previous to the debasement of the genuine Hinduvi of the northern provinces, by the mixture of Arabic nouns, and the abuse of verbal auxiliaries. The resort of the people of Guzerat to Malaua, he adds, *is particularly noticed by De Barros,* and*

* Jean De Barros, a Portuguese in the court of Emanuel, and preceptor to the prince Don Juan, who, after he became king, employed him in the colonies. His History of Asia and the Indies was published in four different parts, at different epochs, in 1552, 1553,

other authentic writers; and it is well known that the Hindū language has been preserved with more purity in that, than in any other maritime province of India. To this (Dr. Leyden says), it is sufficient to answer, that the Sanscrit vocables, adopted in Malayu and Guzerati, are generally preserved purer in the former than in the latter; that the Guzerati has no pretensions to be considered as a pure dialect of Hinduvi, but on the contrary, is one of the very first that was corrupted by a mixture of Arabic, and that long prior to the period mentioned by De Barros. The Bengali language itself, corrupted in pronunciation, as it certainly is, might have been more safely adopted as the medium for the introduction of Sanscrit vocables into Malayu. Many Sanscrit words that are in current use in Bengali, likewise occur in Malayu, with almost the very same pronunciation. Of this

---

and the fourth in 1615, forty-five years after the death of the author. It was reprinted at Lisbon, as well as the continuation of it by Coûto, in 1778.

it is easy to produce a multitude of instances."

"The greater part of the words of Sanscrit origin, found in Malayu, do not appear to have been introduced through the medium of the Bali. In many instances, the Malayu form approaches nearer the pure Sanscrit than even the Bali itself; and many mythological stories exist in Malayu, with mythological characters introduced in them, that, as far as I have been able to learn, do not occur in Bali compositions at all."

Dr. Leyden, speaking of Malay literature, mentions several articles taken from ancient Hindū writings, and among these, narratives termed Hikaiat Pendawa, or *Pandu stories*, which are popular versions in abridgment of the Sanscrit epic poem, the Maha-bharat; "some of which, in reality, give the outline of the story, as faithfully as the popular abridgments of it, which I have perused in Mahrata, Tamul, or Telinga. I am only acquainted with the following Malay Hikaiats of this class:

Pindawa Lima, the story of the five Pandús; Pindawa Jaya, the victory of the Pandús; Pindawa Berjuddi, the gaming of the Pandús; Pindawa Pinjam bali, the Pandús borrowing a Palace; Pindawa berjewal kapur, the Pandús selling lime. The Hikaiat, named Maha Raja Buma, of Purichu Nikassan, or, account of the contest between Brahma and Vishnu, professes to be translated from the Keling of the dramatist, Mungakarta Nigara. The Sah-Sipun'dia, or history of a Keling Rajah, is probably derived from the same source. The Hikaiat, Sri Rama, is reckoned a Susupun story, as are the Kusoma Indra, or the history of Indra, the Balinta Sena, the Sah Kobut, or history of the war with the Apes, the Rajah Ular Ninggawong, the Hikaiat, Bida Sari, the Hikaiat, Raja Pikermadi, or Vicramaditya Cheritra, the Hikaiat, Derma Rajah, and the Hikaiat, Kalil o Damna, or Malay version of the Kalil o Dumna."*

* "Les tomes 1er et 2d des Mémoires de la *Société*

"The literature of the Javanese is similar to that of the Malays, to which it seems to have given origin. Their Kuggawins, or Cheritras, contain their mythology, and the adventures of their ancient heroes, and exhibit them in a style which has no inconsiderable resemblance to that of the Hindū Puranas. The Javanese laws are arranged in codes of considerable antiquity, and celebrated among all the eastern islands."

"The Bali and Madura languages, spoken by the inhabitants of the isles of the same name, appear from the best information I could procure, to be dialects of Javanese. The greater part of the inhabitants profess the ancient religion of their ancestors; resemble the Hindūs in their appearance; wear the Hindū marks on their forehead; and the women burn them-

---

de Batavia, renferment l'histoire d'un ancien Raja, traduite du Malai, et l'on trouve à la fin de la grammaire Malaise une assez nombreuse nomenclature de livres Indiens, Arabes, et Européens traduits en Malai."—*Langlès.*

selves with their deceased husbands, according to the practice of the Hindūs. Like the unconverted Javanese, they are peculiarly addicted to the worship of Indra, Surya and Vishnu; but being neither in possession of their original religious books, nor of the extracts from them which have been adduced in the Transactions of the Batavian Society, I forbear to dilate on this subject at present."

The alphabet used by the Rekhends, or original inhabitants of Arracan, or Ruckan,*

---

* Arracan, or, as it also named, Ruckan, lying at the bottom of the bay of Bengal, begins where Chittygong ends, which is the most eastern part of the British possessions in that quarter. The Barma empire commences on the coast where Arracan ends, and is separated from it, inland, by a lofty ridge of mountains. This empire now includes the ancient kingdom of Pegu; which was finally reduced by the Barmas about the year 1760. The ancient name of the empire was Miamma, but it is now, as well as its capital, called Ava. On the N. W. it is separated from Casay by the river Kein-duem; on the North it is bounded by mountains, and some small independent Rajahships that lie contiguous to Assam; and on the N. E. and East by the borders of China and North-Siam. Pegu occupies the

is said to coincide accurately with the Devanagari system of characters in its arrangement, and very nearly in the power of the particular characters: Dr. Leyden, after mentioning several Rekhend literary works, says, " it is evident, that the subjects of some of these works are the adventures of characters well known in Sanscrit mythology, as the Rama Wut'hu, or history of Rama, the Budd'ho-wa-du, or history of the Avatar Budd'ha; others of them seem to be only Rukheng versions of well known Sanscrit compositions, as the Thi-to-pa-desa, or Hitopadesa, the Tham-ma-sut-Manu, or Dherma-sastra of Menu. The Suwanna-Asyang is the popular story of Suvurna Springi, or the Golden Cow, formed by the Brahmen Sumbukara Misra, and presented to Raja Mukunda Deva Cajapati. The Bhuridat is the history of Raja Bhuridatta of Magadha, mentioned in the Maha-Bha-

---

sea-coast from the borders of what, before its conquest, were the limits of the Barma Empire, and extends as far as Martaban, or, as it is also named, Mondima-a.

rata, and the Bhuridat-kapya, or Bhuridutta-kavya, is a poem on the same subject. The Rajabuntza is the Rukheng edition of the Raja-Vumsavali; the Raja-Wontgza is a different work on the same subject, and the Pat'ha-wi-jéya seems to be the Prit'thu-vijeya. Of the modifications they have received in the process of translation, I have hitherto had little opportunity of judging; but as far as I have been able to investigate the subject, not only the style, but the incidents and progress of the Sanscrit narration are generally altered, to render them more illustrative of the ascetic doctrines of the Budd'hist sect; such as the guilt of killing animals, even accidentally; and the perfection acquired by Rishis in solitary retirement, by means of sublime penance and meditation."

The poem intituled in the Rekhend language Nga-Chaing-Braing, is the history of the birth of Gautama, and is evidently taken entire from the Hindū mythology; and the Chatu-Damasara, as it is termed in Pali, contains an eulogium of a

sovereign of Benares. The poem begins by saying: "Baranasi (Benares) was a beautiful and extensive region, inhabited by a race superior to every other, whether far or near, living fortunate and happy. Baranasi was, in every respect, an admirable country, possessing every thing desirable; for in that kingdom prevailed the practice of charitable donation, and the performance of ascetic duties."*

The language used by that numerous and powerful people, the Barmas,† differs from the Rukheng: its alphabet corresponds with the Bali. *The Barmas affect* a more delicate pronunciation than the Rekhends; but their speech is less articulated, and less conformable to true ortho-

* In the poem the Rajah is named Sivakara Kasa Mitra Ketu. Doctor Leyden says, "it is difficult to determine, from the Barma text, the true name of this sovereign of Benares; but several names, in some degree similar, as Mitreya and Ketumat, occur in a Pauranic list of the Rajas of Benares, descended from Divodasa, which was pointed out to me by Mr. Colebrook."

† See page 213, note.

graphy. The Barma language, however, has been highly cultivated, and in it are to be found numerous works on religion and science, mythology, medicine, and law; nor is the pretended science of astrology neglected. Many of the Barma poems are supposed to be derived from Sanscrit works, and the adventures of Rama in Lanka or Ceylon, are favourite topics in the Barma Dramas.*

The *Mon* language is still used by the original inhabitants of Pegu, who call themselves *Mon,* but by the Barmas they are named *Taleing,* and by the Siamese *Ming-Mon.* Its alphabet seemed to Doctor Leyden to be only a slight variation from the Barma-Bali alphabet.

Colonel Symes in his account of the ambassy to Ava, says "The kindness of Colonel Sir John Murray supplied me with the Code

* "The Barma language has been little cultivated by Europeans, excepting the Catholic Missionaries. The *alphabetum Barmanum,* digested by Carpanius, was published at Rome in 1776." As. Res. vol. x. p. 238.

of Arracan laws, from which the Barman Dherma Sastra is compiled. It should be observed, that all the various law tracts in use amongst the Hindūs, whether sectaries of Buddha, or of Brahma, are but so many commentaries on the laws of Menu, the great and acknowledged founder of Hindū jurisprudence, whose original work has been translated with so much elegancy by Sir William Jones."

The language used by the Siamese is called *Thay,* which is also the name they assume as a nation. By the Barmas the country is called Syan, from whence probably the Portugueze Siam or Siaom.*

* "La Loubiere, who visited Siam in 1687-8, as Envoy Extraordinary from the French monarch, has given incomparably the most accurate account, that has ever been exhibited, of this nation, formerly reckoned the most polished of Eastern India. He divides them into two races, the *Tai* and the *Tai Yai.* The latter nation, he adds, are reckoned savages, though the most ancient. Their name signifies literally *the great Tai,* and, in order to distinguish themselves from this nation, the ruling race, in modern Siam, assume the name of *Tai-noë, the little Tai.* Doctor Fr. Buchanan, how-

Doctor Leyden has given catalogues of some of the principal literary compositions in the Rukheng, Barma, and Siamese languages. He observes that "the Rama-Kien of the Siamese seems to be a version of the Ramayan, and relates the adventures of Pra'm or Pra Ram, and his brother Pra-La'k or Lakshmana, and their wars with Totsa-kan or Dusha-kantha (which is one of the names of Ravana,) who carried off Nang Séda or Si'ta. This narrative corresponds, as far as I have been able to learn,

---

ever, on the authority of the information he received in the Barma dominions, divides the Siamese race into many states; and gives a specimen of the vocables of three dialects. This brief vocabulary, with La Loubiere's observations on the Siamese language, and *The maxims of the Talapoins*, translated out of Siamese by the Catholic missionaries, which he has published in his *Historical Relation of the Kingdom of Siam*, constitute all that has been published respecting the language or literature of this nation, in any European tongue. The result of my own inquiries certainly coincides more directly with La Loubiere's information, than with that received by Doctor F. Buchanan."—*Dr. Leyden*, *Asiat. Res.* vol. x. p. 241.

with the Sanscrit poem, and almost all its incidents have been converted into Natakas for representation by the Siamese, in the same manner as the Barmas have employed the incidents of the Yama-meng or Barma-Ramayan. The *Maha Chinok* in the same language appears equally to have been taken from that celebrated Sanscrit poem."

The K'hohmén is a language used by a nation of that name on the Me-kon, or river of Kam-bu-chat, or Camboja. The Siamese from whom Doctor Leyden received his information in regard to it, assured him that it was entirely different from either the Thay language used in Siam, or the Juan used in Cochin-China. The K'homens are reckoned an ancient and learned people; who at a remote period, were subdued by the Thay-J'hay or Siamese race. They are believed to derive their origin from a warlike race of mountaineers named Khô, called by the early Portugueze writers Gueos, and who are represented as still practising the eating of human

flesh, and painting and tattooing or punctuating their bodies.

The *Law* language is used by an inland nation of that name, called by the Portugueze Lâo, and in plural Laos. From specimens of the language which Doctor Leyden procured from some Siamese and Barmas, it appeared to him to bear about the same affinity to the Thay or Siamese, as the Barma bears to the Rukheng; but that, in the adoption of Bali terms, it adheres more accurately to the orthography of the Bali than either of these two. " It is from this nation that both Siamese and Barmas allege that they derive their religion, laws, and institutions. It is in the country of Law, that all the celebrated founders of the religion of Budd'ha are represented to have left their most remarkable vestiges. Ceylon boasts the sacred traces of the left foot of Budd'ha on the top of the mountain Amala-Sri-padi, or by Europeans *Adam's Peak*. Siam exhibits the traces of the right foot, on the top of the golden mountain Swa-na-bapato. Other traces

of the sacred steps are sparingly scattered over Pegu, Ava, and Arakan; but it is among the Lâos, that all the vestiges of the founders of this religion seem to be concentered, and whither devotees repair to worship at the traces of the sacred steps of Pra-Ku-ku-sôn, Pra-Kon-na-kon, Pra-Put-t'ha-Kat-sop and Pra-Sa-mut-ta-ko-dom. These Siamese names of the four Budd'has seem to correspond to the *Barma* Kaukasan, Gonagom, Kasyapa, and Gotama, and the *Singhala,** Kakusanda, Konagam, Kasyapa, and Gautama. There can be no doubt, however, from the order of the names, but that they are the four last Budd'has in the list given by Hemachandra Acharya in the Abhid'hana Chintameni, under the following Sanscrit appellations, from which all these Siamese. Barma, and Singhala names, seem to be only Bali corruptions. The Sanscrit names are, Krukruck'hunda, Kan'chana, Kasyapa, and Sakyasinha."

---

* The language used in Ceylon.

"The *Bali* language among the Indo-Chinese nations, occupies the same place which Sanscrit holds among the Hindūs, or Arabic among the followers of Islām. Throughout the greater part of the maritime countries which lie between India and China, it is the language of religion, law, literature, and science, and has had an extensive influence in modifying the vernacular languages of these regions. The name of this language, though commonly pronounced Bali, is more generally written Pali; but both forms are occasionally used. As the origin of the word is still very obscure, it is difficult to determine which is the more correct orthography. If, however, we could venture to identify the term with the Báhlika B'hasha, which, in the Sahi'tya Derpana of Viswanatha, is enumerated as one of the languages proper to be used by certain characters in dramatic works, the latter ought to be considered as the more correct. La Loubiere, on the authority of D'Herbelot, has stated* that the ancient

* Tom. i. p. 422.

Persic language was termed Pahalevi, (Pahlavi) and that the Persians do not distinguish in writing between Pehlvy and Bahali. This conjecture would be confirmed by the identity of the terms Bali and Badlika B'hasha, were it to be established; for no doubt can be entertained that in Sanscrit geography, the epithet Bahlika is applied to a northern Indo-Persic region, probably corresponding to Balkh Bamiyan. Among the Indo-Chinese nations, the Bali is frequently denominated Lanka-basa, or the language of Lanka, or Ceylon, and Magata, or, as it is often pronounced, Mungata, a term which seems to correspond with the Sanscrit Magad'hi, which, in many of the Vyakaranas, is enumerated as one of the dialects to be introduced occasionally in Natakas, or Hindū dramas.

" The Bali alphabet seems, in its origin, to be a derivative from the *Devanagari*, though it has not only acquired considerable difference of form, but has also been modified to a certain degree, in the power

of the letters by the monosyllabic pronunciation of the Indo-Chinese nations.* It has dropped, in common use, some letters entirely, and accented others in a manner similar to the Udhata, Anudhata, and Swarita tones, in the system of accentuation used in chaunting Mantras, and in reciting the Vedas themselves. The vowels are generally presented in the same order as the Deva-nagari, but by a similar mode of accentuation, eighteen are sometimes employed. The peculiarities of this pronunciation are, however, more closely adhered to by the Thay or Siamese, than by the Barma and Rukheng nations, whose languages are neither so powerfully accented, nor so monosyllabic as the Thay."

* "Je doute fort que la forme des lettres Balies soit d'origine Dâva-Nâgari, mais leur ordre est évidemment conforme à celui de ce dernier alphabet. Il seroit assez difficile d'expliquer cette identité d'ordre alphabetique, chez les Javans, les Mongoux, les Calmouks, les Mantchous, les Tibetains; il ne faut l'attribuer qu'à l'introduction de la religion Brahmanique plus ou moins corrompue parmi ces peuples."—*Observation made to the Author by M. de Langlès.*

"The form of the Bali character varies essentially among the different nations by whom it is used. The square Bali character, employed by the Barmas, differs much from that which is used among the Siamese, and approaches nearer the form of the Barma character. The Siamese Bali character is termed, by the Siamese, Nangsu Khóm, the Khóm, or Khohmén character, having, according to their own tradition, derived it from that nation. The square Barma character seems to coincide with the Bali character of Lanka or Ceylon; though in that island, Bali compositions are frequently written in the proper Sing'hala character. Of the character used in Lâw, Champa, and Anam, I have had no opportunity of judging."

"The Bali is an ancient dialect of Sanscrit, which sometimes approaches very near the original. When allowance is made for the regular interchange of certain letters, the elision of harsh consonants, and the contraction of similar syllables, all the vocables which occur in its ancient books,

seem to be purely Sanscrit. In Cheritas and latter compositions, however, some words of the popular languages of the country sometimes insinuate themselves, in the same manner as Tamul, Telinga, and Canara vocables occasionally occur in the later Sanscrit compositions of the Dekhin. The Bali, while it retains almost the whole extent of Sanscrit flexions, both in nouns and verbs, nevertheless employs this variety rather sparingly in composition, and affects the frequent introduction of the preterite participle, and the use of impersonal verbs. It also uses the cases of nouns in a more indeterminate manner than the Sanscrit, and often confounds the active, neuter, and passive tenses of verbs. Like other derivative dialects, it occasionally uses Sanscrit nouns and particles in an oblique sense; but notwithstanding all these circumstances, it approaches much nearer the pure Sanscrit, than any other dialect, and exhibits a close affinity to the Prakrit and the Zend."*

* Doctor Leyden examines all that has been said on

"These three dialects, the Prakrit, the Bali, and the Zend,* are probably the more ancient derivatives from the Sanscrit. The great mass of vocables in all the three, and even the forms of flexion, both in verbs and nouns, are derived from the Sanscrit, according to regular laws of elision, contraction, and permutation of letters. Sometimes, in pursuing these analogies, they nearly coincide, sometimes they differ considerably, sometimes one, and sometimes another of them approaches nearest to the original Sanscrit. Their connexion with this parent language was perceived, and pointed out by Sir W. Jones, and has also been alluded to by P. Paulinus, who de-

---

the Bali language by D'Herbelot, La Loubiere, Kæmpfer, P. Paulinus, Vincentio-Sangermano, and Carpanius, and in the French Encyclopedia. He had not before him La Croze, but what is said by that learned author on this subject is not important. Sangermano was an Italian priest, who resided at Ragoun.

* Il est assez probable que le Zend est un livre sacré des Parsys; voilà pourquoi on dit maintenant la langue du Zend. Cette ancienne langue a en effet une étonnante ressemblance avec le Sanskrit."—*Observation communicated to the Author by M. de Langlès.*

rives his information, concerning the Bali, from Carpanius and Mantegatius. The fate of these three languages is also, in some degree, similar. The Prakrit is the language which contains the greater part of the sacred books of the Jainas; the Bali is equally revered among the followers of Budd'ha; while the Zend, or sacred language of ancient Iran, has long enjoyed a similar rank among the Parsis or worshippers of fire, and has been the depository of the sacred books of Zoroaster. It is perhaps, however, more accurate to consider all the three rather as different dialects of the same derivative language, than as different languages; and conformably to this idea, the Bali itself may be reckoned a dialect of Prakrit. The term Prakrit, both in books, and in common use among the Brahmins, is employed with some degree of latitude. Sometimes the term is confined to a particular dialect, employed by the Jainas,*

* A sect in India that has a near affinity with the Buddha sect.—See an account of it, vol. i. p. 269—276.

as the language of religion and science, and appropriated to females, and respectable characters of an inferior class, in dramas. Sometimes it includes all the dialects derived immediately from the Sanscrit, whether denominated Prakrit, Magad'hi, Súraseni, Pais'achi, or Apabhrans'a; and sometimes it is even extended to the D'esa-b'hashas, or popular tongues of India, as Mahrasht or Mahratta, Canara, Telinga, Udia and Bengali. According to the extended use of the term Prakrit, it may certainly include both Bali and Zend; and if more extensive research should justify the idea derived from an imperfect investigation, I apprehend that the Bali may be identified with the Magad'hi, and the Zend with the Súraseni, of Sanscrit authors."

"These three dialects, the Prakrit, Bali, and Zend, have been regularly cultivated and fixed by composition. The same laws of derivation are applicable to the formation of all the three; but yet there is often considerable diversity in the forms which par-

ticular words assume, as appears from the following comparative specimen."*

"In this specimen, the Prakrit words are selected from the Menŏrama Vritti of Bhamaha, and the Prákritalankeswarah of Vidyá Vinod'ha; the Bali are taken at random from the Kumárá-Bap, Chitamnan, and Hatamnán; and the Zend, from the vocabularies of Anquetil du Perron, whose orthography, since I have not been able to procure the original Zend, has been preserved, however inaccurate, in preference to conjectural emendation; though I am convinced that an orthography, more conformable to the original, would render the connexion of Zend with its cognate dialects more apparent."—Dr. Leyden then gives a specimen of the connexion of the Bali with the Sanscrit, by quoting a passage in Bali from the Hatamnan, and which he restores into Sanscrit, without, he observes,

* Doctor Leyden gives a comparative list of a number of Sanscrit, Prakrit, Bali, and Zend words, which the reader may refer to.—*Asiat. Res.* vol. x. p. 284 et seq.

the radical change of a single word. The passage, he says, was chosen at random, and adds, "but considerable portions of Bali have been subjected to the same process with a similar result; and I am satisfied that it applies equally to Prakrit and Zend, though words of an origin foreign to Sanscrit, may occasionally be expected to occur in all the three dialects."*

---

* The passage is thus translated into English:

"The *Devas* frequent *Swurga*, *Kamarupa*, the mountain tops, and atmosphere, in their cars; and on earth they visit the *Dwipas*, the fields, cities, recesses of forests, habitations, and sacred places. In inaccessible places, by land or water, the *Yakshas*, *Gand-hervas* and *Nagas* reside, in the vicinity of waters. Listen to me, ye devotees, while I recite the words of the *Munivaras*: this is the time for hearing sacred things—*(the devotees reply)* Say on. (the speaker proceeds) Reverence to *Bhagavata Arhata*, the all-comprehending. Those who hear, shall become pure of mind, and *Trisara* shall protect them both in this and other worlds: the *Devas*, earthly and unearthly, possessed of various qualities, constantly present themselves to their thoughts; and the *Devas* who reside on *Meru*, the chief of mountains, of pure gold, frequent them. In the full and perfect hearing of the words of the *Munivaras*, the *Yakshas*, *Devas*, and *Bramhanas* delight above all else."

The learned author promises in a future essay to proceed to shew the characteristic structure of the Bali, its grammatical peculiarities, together with the relations which it bears with the Prakrit and Zend; and at the same time to give a view of the Bali literature, and its influence as a learned language on the vernacular *Indo-Chinese* tongues, a promise which we are anxious to see performed. Whatever may come from the pen of Dr. Leyden, we doubt not, will be directed by the same spirit that has evidently guided him throughout the present essay. Animated by a love of truth, he seems equally exempt from prejudice or partiality. He communicates what he has learnt, and always accompanies his opinions with the evidence on which he founds them.* He concludes by saying: "Of the Bali language, different Koshas and Vyaka-

* These pages were written during the author's detention as a prisoner of war in France. He was then unacquainted with the loss the literary world has sustained by the death of Dr. Leyden.

ranas are known to exist; and several of them are to be procured in Ceylon, as the Bali, Subdamala, Balavatara, Nigandu, and Nigandu Sana. Of the Zend, various alphabets and vocabularies, as well as original compositions, are extant; but no set of grammatical forms, with which we are acquainted. The learned Tychsen, in his dissertation *De Cuneatis Inscriptionibus Persepolitanis*, 1798, recommends, earnestly, to the Asiatic Society, to form grammars and lexicons of the Zend and Pahlavi; and this must undoubtedly be performed if ever the subject be accurately investigated; for, as yet, we are imperfectly acquainted even with the true arrangement of the Zend alphabet; though it is probably the origin of the ancient Cūfic character, if not the actual Himyaric character itself. I have at present little doubt that the character of the ancient Zend, or as it is termed, according to Anquetil Du Perron's orthography, *Azieanté*, is derived from the Deva-nagari; for that author himself admits that the vowels coincide with the Guzeratti, and

hints that in some alphabets the consonants also have a similar arrangement. Numerous circumstances likewise lead us to conjecture, that if ever the Persepolitan inscriptions in the *Arrow* character be decyphered, it will be on the principles of this alphabet. Niebuhr has stated, from actual observation, that the characters of these inscriptions are certainly written from left to right, like the Deva-nagari, and the alphabets derived from it. If this authority can be depended on, it completely sets aside every attempt to explain them by any alphabet written from the right hand to the left. A subject, however, like the *Arrow character*, concerning which there are almost as many opinions, as authors who have engaged in the discussion, can never be illustrated by mere conjectures, however ingenious or plausible."

It would be superfluous to proceed further with that learned writer, but to such as may be desirous of more minute information we earnestly recommend a perusal of

his essay itself; and shall conclude our remarks on the Sanscrit Language by an appeal to the authority of Dr. Wilkins.

"He who knows Sanscrit has already acquired a knowledge of one half of almost every vernacular language of India; while he who remains ignorant of it, can never possess a perfect and critical understanding of any, though he may attain a certain proficiency in the practical use of them. The several dialects confounded under the common terms *Hindi, Hindavi, Hindostani,* and *Bhasha,* deprived of Sanskrit, would not only lose all their beauty and energy, but, with respect to the power of expressing abstract ideas, or terms in science, would be absolutely reduced to a state of barbarism. These, and the idioms peculiar to Bengal, Kāmarupa, and the adjacent provinces; the *Tamul,* the *Telinga,* the *Carnatic,* the *Malabar,* together with that of the Mahratta states, and of Gujarat, so abound with Sanskrit, that scarcely a sentence can be expressed in either of them without

its assistance. The learned languages of Tibet, of Ava, and of Ceylon, are enriched by it; and every one of them is indebted to it for its alphabet, however dissimilar their characters may seem at first sight."

"The lover of science, the antiquary, the historian, the moralist, the poet, and the man of taste, will obtain in Sanskrit books an inexhaustible fund of information and amusement. Besides the Vedas, there exist at this day numerous original treatises of considerable antiquity, on astronomy, mathematics, and other sciences, highly worthy of examination; various systems of philosophy and metaphysics; innumerable tracts on grammar, elocution, logic, the art of poetry, music, medicine, ethics, politics, and other topics; with sublime and elegant poems on every variety of subject; more particularly those grand mythological treasures, the ancient poems called Puránas, an endless assemblage of enchanting allegory and fable, and of the most interesting stories of ancient times, recounted in polished numbers, calculated to allure the

reader into the paths of Religion, Honour, and Virtue."*

From what has been stated, and also from the authorities occasionally referred to,† we think ourselves authorized to advance, that traces of the language, learning, and mythology of the Hindūs, will be found, not only throughout the *Indo-Chinese* nations, but also to the extremities of Tartary. That, in such extensive progress, some deviations may have been made; that, in some regions, new divinities may have been invented; and that rites and rules, necessary or admissible in the climate of India, may have been found inapplicable in more rigid countries, must naturally be supposed: but wherever we may direct

* Preface to the Grammar of the Sanscrit language, pp. x, xii.

† See also the Author's Sketches on the Hindūs, vol. ii. p. 171, et seq.; the account given of Thibet by Mr. Bogle, who was sent on an ambassy to the Lama by Governor Hastings.—Relation of another ambassy thither by Turner, in 4to; and the account given by Symes of his ambassy to Ava, 4to. and 8vo.

our inquiries, throughout the immense space we have mentioned, we are persuaded that some prominent features of the Hindū languages and religion will be discovered.

A short account of the doctrines and religious practices of the Siamese (we conceive) will, not unappropriately, conclude this chapter.

Their laws and tenets, as we have already observed, are written in Pali. They say, that "a language, in which so many mysteries are communicated, should itself be a mystery, and not profaned by the impious; or, what may be written in it, misapprehended by the ignorant."

Their religion enjoins the adoration of God; and Father Tachard,* with an honest frankness, observes, that as far as regards precepts of morality, and instruc-

* A Jesuit missionary already quoted by us; he was at Siam at the same time as the Abbé de Choisy. See his *Voyages à Siam*, published at Paris in 1686 and 1689.

tions for our conduct in life, "no Christian can teach any thing more perfect than what it prescribes. It not only forbids its followers to do ill, but enjoins the necessity of doing good, and of stifling every improper thought, or criminal desire."

The belief in an universal pervading spirit, and in the immortality and transmigration of the soul, forms a fundamental part of the doctrines of the Siamese. They believe the universe to be eternal, without beginning or end; but they admit, that particular parts of it, such as this world, its productions and inhabitants, may be destroyed and again regenerated.

They have their good and evil genii; their rural and other deities, who preside over their forests and rivers, and interfere in all sublunary affairs.

They are extremely curious to look into futurity, by applying to their astrologers and oracles; and there is a famous cavern where they go to make sacrifices, and consult the priests who attend there.

Far from considering suicide as a crime,

in some cases they think it commendable; that it may render service to the soul, by delivering it from an inconvenient habitation; and it is not uncommon to find a Siamese hanging upon a particular tree, dedicated to the god Mercury, and called in Balic *Pra-si-maha-pout*, or *the tree sacred to the great Mercury.*

The Talapoins, or priests, live in monasteries contiguous to the temples. They make vows of chastity, the breach of which is punished by the offender being burnt to death; but what is singular, and entirely opposite to the rules observed in India, any one may enter into the priesthood, and after a certain age may quit it, marry, and return into society. Nor are the people divided as in India into casts; but if the Hindū religion were introduced into Siam after a certain order of civil society had been already established there, it may be supposed that the system observed in India, of separating the people into casts, may have been omitted as no longer practicable. The Talapoins, however, are distinguished from,

and elevated above, the bulk of the people; nearly in the same manner as the Brahmins among the Hindūs. They maintain with jealous care the respect they think due to their order; which, with charitable donations to themselves and the building and repairing of temples and monasteries, they inculcate as pious duties. They never return a salute to a layman, not even to the prince, though the prince never fails to salute a Talapoin.

By the rules of their order, they are enjoined to go to the temples and perform their devotions twice a day, in the morning and evening; to confess their faults to each other; to be watchful, not to encourage any wicked thought, or admit into their mind any doubt with respect to their religion; never to speak to any of the other sex alone, nor to look stedfastly upon any one they may accidentally meet; not to prepare their own food, but to eat what may be given, or set before them, ready dressed; not to enter into a house to ask alms, nor to wait for them longer at the

door than the time that an ox may take to drink when he is thirsty; not to affect friendship or kindness with a view to obtain any thing; to be sincere in all their dealings, and when it may be necessary to affirm or deny any thing, to say simply, *it is*, or *it is not*: never to be in a passion with any person, or from any cause strike any one; but to be gentle in their manners, and compassionate in their conduct: not to keep any weapons of war; not to judge any one by saying he is good, or he is bad; not to look at any one with contempt; not to make any one the subject of ridicule; not to say that any one is well made or ill made, or handsome or ugly; not to frighten or alarm any one; not to excite people to quarrel, but endeavour to accommodate their disputes; to love all mankind equally; not to boast either of birth or learning; not to meddle in any matters of government, that do not immediately respect religion; not to be dejected at the death of any one; not to drink spirituous liquors of any kind; not to disturb the

earth themselves by labouring in it; not to cut down any plant or tree; not to cover the head, nor to have more than one dress; not to sleep out of their monastery; not to eat out of any vessel of silver or gold; not to play at any game; not to accept of money but by the hand of the person in the monastery, who may be appointed for that purpose, and then to apply it to charitable and pious purposes; not to envy any one what he may enjoy; not to be in anger with any one, and, retaining that anger, come with him to any religious ceremony, or act of devotion; not to sleep on the same bed with any one. Beside these, they have many other rules respecting their morals and behaviour.

They are called every morning from their sleep by the sound of the *gong;* but they are enjoined not to rise, till they can discern the veins in their hands, lest they should kill any thing, by treading upon it.

Each monastery has its *Sancra,* or superior, who is elected by its members, to

preside over them. After having performed their ablutions, and before they eat any thing, they go with the Sancra to the temple, where they prostrate themselves before the images, and afterwards sit down with their legs under them, and chant and perform their devotions in the Bali language. Father Fontenay, in his relation of a voyage from Siam to Macao, speaking of some Talapoins whom he saw at their devotions, says: "They were sitting on the ground, with their hands joined together, and chanted for the space of an hour with their eyes fixed on the idol. Few persons in Europe perform their devotions with so much modesty and respect, especially when they last so long. I confess that their example made me feel more sensibly than any sermon could have done, with what humility and reverence we should behave before the majesty of God, when we address him in prayer, or appear before him at the altar."

They dine at noon, and except this meal,

never eat any thing but fruit, or at any time drink any thing but water. In the evening they return to the temples, and perform their devotions as in the morning; the intermediate time, except what is spent at dinner, is employed in the education of youth, in reading books containing their doctrines, and in walking abroad at certain fixed hours.

The Talapoins never offer any bloody sacrifice; and it is a favourite charity with them, to buy animals, and give them their liberty.

There are devotees among them, who lead the most austere and solitary lives; and almost entirely refrain from speech, in order, they say, that their thoughts may not be disturbed from contemplating the Almighty. These wander about the country; they have neither monasteries, nor any other habitation; the people imagine that they are protected from the beasts of prey, with which the woods abound, by a sacred influence that surrounds their per-

sons; and wonderful stories are told of the fiercest of these animals, coming with the gentleness of lambs, and licking their hands and their footsteps.

Like the Hindūs, the Siamese reject the idea of eternal punishment, believing that the professors of any religion may be saved, by observing its precepts, and practising the duties of morality; and, like them, they also pretend, that some holy men have the peculiar power in their transmigrations, to look back upon their former state of existence. Many of the superstitious prejudices that are to be found among the Hindūs, prevail equally with the people of Siam. They observe the feasts of the new and full moon, and think the days that from the change precede the full, more fortunate than those which follow it. Their almanacks are marked with lucky and unlucky days; nor will any one who has the means of applying to astrologers, undertake any thing without first consulting them. They look upon the cries of certain birds, the howlings of animals, a serpent

crossing the road, or any thing falling without an evident cause, as unfavourable omens; and such occurrences are sufficient to prevent them from setting out on a journey, and to induce them to put off any business, however urgent it may be.

Many of the musical instruments of Siam are the same with those used in the temples of the Hindūs, and were probably introduced with their religion.

The Siamese, in general, bury the dead: the bodies of persons of distinction, are however, burnt with much show and ceremony: but if it was ever the custom for the widow to burn herself with the corpse of her husband, it is no longer observed. The bodies and ashes of the dead are generally buried under small pyramids, that are built round the temples; sometimes the ashes are thrown into a sacred river, on a supposition that it will be propitious to the soul of the deceased. All offer sacrifice to the manes of their relations. They imagine that they sometimes appear to them in

dreams; and, as often as this happens, the funeral sacrifices are repeated, and offerings made at the temples, for the expiation of their sins.*

* See Sketches on the Hindûs, by the author of the present work, vol. ii. p. 117, *et seq.*

CHAPTER XII.

SOME ACCOUNT OF ANCIENT AUTHORS, WHO HAVE DESCRIBED INDIA.

The ancient authors that have treated of India, whose works are yet extant, and chiefly merit to be consulted, are Strabo, Pliny, Ptolemy, and Arrian. They lived at no great distance of time from each other: Strabo must have written not more than sixty years before Pliny, the latter about as much before Ptolemy, and the latter about twenty before Arrian. It appears that they had some works to assist their inquiries, which no longer exist. Though Diodorus Siculus wrote his history in the time of Julius Cæsar, a few years before Strabo, it does not appear that either he, or the other three authors we have mentioned,

trusted much to his authority: Rennell observes, that "Arrian seems purposely to correct some of his errors." It is not known exactly when Quintus Curtius lived, but he must have compiled his account of the expedition of Alexander subsequently to the authors we have mentioned.

Of those who accompanied Alexander into India, Onesicritus, a disciple of Diogenes, the Cynic philosopher, wrote a history of his life,* which was regarded by Strabo as too fabulous to merit confidence; but, if fabulous in some things, we find others confirmed by subsequent observations; and notwithstanding the accusation brought against him by Strabo, he in several instances appeals to his authority. In proof of his merit it may be observed, that in the distribution of recompenses, made at the celebration of Alexander's nuptials, at Susa, with Barsine, or Statira, daughter of the unfortunate Darius, Nearchus

* This author is mentioned by Diogenes Laertius, lib. vi. c. 4. tom. ii. p. 642 (edit. Longolii).

and he were honoured with crowns of gold.* The former had commanded the fleet on its voyage from India; the latter had piloted it, which is a proof also of Onesicritus's knowledge in science. Callisthenes † likewise wrote a history of Alexander, which is mentioned by Strabo. Journals of his proceedings were kept by his natural brother, Ptolemy Lagus; by Aristobulus of Cassandria,‡ by Diodotus of Erythræa, in Bœotia, and by Eumenes of Cardia, the secretary and faithful friend of Alexander, and one of the most illustrious, though least fortunate, of his successors. Diognetus and Beton had

* "To Onesicritus we trace the first mention of Taprobania, or Ceylon; and what is extraordinary, the dimensions he has assigned to it, are more conformable to truth, than Ptolemy had acquired four hundred years later, and at a time when it was visited annually by the fleets from Egypt."—*Vincent*, vol. ii. p. 20.

† Vide supra, vol. i. pp. 220, 221, note.

‡ This city was formerly named Potidæa—so famous for its siege in the time of Pericles: the name was changed to Cassandria, by Cassander, son of Antipater.

the charge of keeping an itinerary of his marches, and, as far as they had opportunities, they surveyed the countries through which he passed. Many of the valuable materials contained in the Journal of Nearchus, were happily preserved by Arrian.* Whether Clitarchus of Eolia, who likewise wrote a history of Alexander, accompanied him to India, is uncertain. But the works principally consulted by Arrian, in his account of the expedition of Alexander, were the journals of Ptolemy Lagus and Aristobulus. They were both favourite generals of Alexander, much about his person, and no doubt had access to, and made use of the topographical journals of Diognetus and Beton, and which are supposed to have been still extant when Strabo and Pliny wrote. Ptolemy and Aristobulus,

* It is to be noticed that Strabo has copied this Journal as evidently as Arrian; and that he is indebted to Nearchus for many facts; which, however extraordinary they might appear in his age, have been confirmed by modern observation."—*Vincent*, vol. i. p. 69.

and he were honoured with cro
gold.* The former had command
fleet on its voyage from India; th
had piloted it, which is a proof
Onesicritus's knowledge in science
listhenes† likewise wrote a hist
Alexander, which is mentioned by
Journals of his proceedings were
his natural brother, Ptolemy Lag
Aristobulus of Cassandria,‡ by
tus of Erythræa, in Bœotia, and
menes of Cardia, the secretary an
ful friend of Alexander, one
most illustrious, though ortu
his successors. Diogn Be

* "To Onesicritus we
probania, or Ceylon; and
dimensions he assigne
to truth, than emy he
la d at a t e whe
fleets fro "—Vi
† Vide ol. i.
‡ This
for its si in
changed to C

ground a supposition so unfavourable to the latter is made, unless it be from the above mentioned charge brought against him by Strabo, of his being fabulous.

The work of Arrian, containing an account of India, was published after his history of Alexander; and seems, according to the opinion of Rennell, to have been written with the view of elucidating some parts of that history. Though he probably consulted, for this work, all the different authors who had before written on the subject, it appears that he chiefly relied for his information on the journals of Nearchus and Megasthenes. The latter, as already observed, had been sent as ambassador of Seleucus Nicanor to Sandrocotus, at Palibothra; and during his stay in India, not only committed to writing what he had opportunities of observing himself, but what he learnt from others that seemed to him to merit notice.

Besides the works mentioned above, as having been written on India, by the followers of Alexander, and by Megasthenes,

there is one, said to have been composed by Daimachus, who, after the return of Megasthenes from Palibothra, was sent thither by Seleucus as ambassador to *Allitrochades* the successor of *Sandrocotus*; and also by another Patrocles, who, under Seleucus and his son Antiochus Soter, appears to have governed provinces of their dominions contiguous to the Indus, and to have visited India.*

It was on account of the supposed fabulous narratives contained in the works of former authors, that Strabo preferred those of Eratosthenes and Patrocles, though the former had never visited India at all; and though Patrocles, according to Dr. Vincent, and which, indeed, seems probable, had never been beyond the Panjab, that is, not farther, and perhaps not so far as Alexander had been, whereas Megasthenes and Daimachus had resided on the banks of the Ganges.

The accuracy of the ancients in the geo-

---

* See Plin. lib. vi. c. 17.

graphy of India *Intra Gangem*, when compared with their means of acquiring a knowledge of it, must surprise all those who may attentively consider the subject. Rennell says that the ancient authors will be found at least as correct in their observations, and in the positions given by them to places, and to have had as just an idea of the country *Intra Gangem*, as European geographers possessed forty years before the date of his Memoir, that is, only about sixty years ago.* The journals of Ptolemy, Aristobulus, and Nearchus, long formed the basis of the geography of India, and of the labours of subsequent authors on that subject. It has been observed, that The *Antiquité Géographique de l'Inde*, by that great modern geographer D'Anville, is far from standing on a level with the

* See in the "Transactions of the Royal Society of Edinburgh," April, 1816, an "Essay by Mr. Hugh Murray, on the Ancient Geography of Central and Modern Asia, with Illustrations derived from recent discoveries in the North of India."

merits of his other works:* having mistaken the Chelum, or Hydaspes, for the Indus of Alexander, he has consequently misplaced, and mis-named the subsequent rivers of the Panjab.†

"Arrian's Indian history, which is extremely curious, and merits more notice than it commonly meets with, shews us how very little change the Hindūs have undergone in about twenty-one centuries, allowances being made for the effect of foreign conquests; which, however, have produced fewer changes here, than they would have done any where else: for customs, which in every country acquire a degree of veneration, are here rendered sacred, by their connexion with religion; the rites of which are interwoven with the ordinary occurrences of life. To this, and to the seclusion from the rest of mankind, inculcated by the Brahminical religion, we are to ascribe the long duration of the Hindū religion and customs; which are only to

* Vincent. † Rennell.

be extirpated, together with the very people among whom they prevail; and which have been proof against the enthusiasm and cruelty of the Mohammedan conquerors: nay more, have taught a lesson of moderation to those conquerors, who at last saw no danger arising to the state, from a religion that admitted no proselytes.

"We are at the first view surprised to find that Arrian, who professes to treat of India, should confine himself to the description of a particular part only, while he had authors before him who had treated the subject at large. It may however be accounted for in this manner: that he chose to follow those only, who had been eye-witnesses to what they wrote; not compilers: and it is pretty clear that his account of India is meant chiefly to illustrate the history of his hero. The following particulars, selected from among others, will shew to those who are conversant with India, how nearly the ancient inhabitants resembled the present. 1. The slender make of their

The Banian, Burr, or Vota tree,* and the Indian devotees sitting under them.

"As to Megasthenes, Arrian thought he had not travelled far over India; although farther than Alexander's followers. This opinion may serve partly to explain, why Arrian did not preserve the journal of Megasthenes by inserting it in his history of Alexander, or in his account of India.

"His geography of India relates chiefly to the northern parts, or those seen by Alexander and Megasthenes. And his catalogue of rivers, most of which are also to be found in Pliny, and among which we can trace many of the modern names, contain only those that discharge themselves into the Ganges or Indus.

"Of the different histories of Alexander, that have travelled down to us, that by

* Points of branches of this tree descending into the ground, take root and shoot up into fresh trees; hence so large a space is *sometimes* covered, from one original stem, that it is no exaggeration to say that a battalion of five hundred men might easily encamp under the shade produced by it.

[illegible] appears to be the most consistent; [illegible] in the geography of Alex- [illegible] marches, and voyage in the Pan- [illegible] which country, by the nature of its [illegible] and by their mode of confluence, is particularly favourable to the task of trac- [illegible] his progress."*

* Rennell, Introduction to Memoir of a Map of Hindūstān, edit. 1793, p. 28, et seq.

CHAPTER XIII.

ON THE ANCIENT COMMERCE AND COMMUNICATIONS WITH INDIA BY EUROPEAN NATIONS.

THE term Monsoon is given to those winds which prevail alternately, during six months of the year, from the North East and South West quarters. Arrian calls them *Etesian*, from the name given to those winds which blow from the Euxine and Hellespont in summer, but particularly during the months of July and August, over the Egean sea, and across the Mediterranean into Africa. Near the Indian coasts, the course of the Monsoon winds frequently gives way for a few hours in the night and early in the morning, to breezes from the land. Vessels of small dimensions, by keeping near the shore, take advantage of those breezes to

get along the coast in a direction opposite to the course of the Monsoon; as, however, when the breeze fails, they must anchor, and wait for its return, their progress necessarily becomes extremely tedious.

The North East Monsoon is expected to set in towards the end of October, and is replaced by the S. W. Monsoon in April; but there is at both changes a space of fluctuation sometimes of more, and sometimes of less duration. The change of the Monsoons is accompanied by the periodical rains, and frequently by violent tempests. The rains on the coast of Coromandel are most abundant, at the setting in of the N. E. Monsoon; but, on the Western and N. W. parts of India, when the S. W. wind begins in April and May. On the coast of Coromandel and Bay of Bengal, the setting in of the N. E. Monsoon is most apprehended by navigators. That in the spring is seldom accompanied by any great tempest. The commanders of ships in the Royal navy and in the East India Company's service have orders to quit the

coast of Coromandel by the 15th of October, and not return to it before the beginning of January: for though, on the coast of Coromandel and through the whole Bay of Bengal, the tempests we have alluded to rarely happen after the beginning of December; and though, during at least four months of each Monsoon, or more than eight months in the year, the winds blow alternately S. W. and N. E. in a moderate and steady gale, yet there are instances of tempests happening sometimes later than the period above mentioned.* The fleets

* On the coast of Coromandel, the violent hurricanes which so frequently accompany the change of the Monsoon from S. W. to N. E. are almost constantly preceded by a large swell rolling in upon the shore. While an English squadron was blockading Pondicherry in 1760, on the 30th December of that year, though the weather was then calm, a prodigious swell began to roll from the Eastward towards the land. The weather became close and dusky; the surf beat so violently on the shore as to render communication with it impossible. Admiral Stevens, who commanded the blockade, aware of his danger, but knowing that the capture of the place depended on preventing provisions from being

of England went formerly to Bombay, when the change of the Monsoon from S. W. to N. E. was expected; those of France to

---

introduced into it, had, on the first indication of a storm, sent orders to rear-admiral Cornish, who was with a division of the fleet at Trincomaly, to come with all diligence, and, in case of accident to him, take his station.* Early on the 31st it began to blow in hard and progressively increasing squalls. There lay in the road eight ships of the line, two frigates, a fire-ship, and a large ship loaded with stores. During the day the tempest continued to increase, and after sun-set blew with excessive violence. At ten at night the admiral cut his cable, and standing out to sea, made signals for the other ships to do the same. But the roaring of the storm prevented the guns from being heard, and the duskiness of the atmosphere, the lights from being seen. The commanders of the other ships, in obedience to the strict discipline of the English navy, remained; but some parting from their cables were, by the effect of the elements themselves, saved: as, being then free, they succeeded in getting into the offing. Every moment the tempest augmented until about twelve at night, when the wind veering to the N. E. suddenly fell calm; but soon after, it began from the S. E. to blow with greater fury than before. The Newcastle, the Duke of

* A duplicate of this letter, which fell into the hands of the French, was published at Paris in a pamphlet written by the late Count d'Estaing.

the island of Mauritius; but of late years those of England have it in their option, as circumstances may determine, either to go

---

Aquitaine, and the Sunderland line of battle ships; the Queenborough frigate, the Protector fire-ship, and Duke transport, foundered at their anchors, or were dashed to pieces in the surf. On the 1st of January, the sun rose clear, to shew the dreadful effects of the storm; the shore was covered with dead bodies, masts, casks, pieces of timber, and all the other marks of complete shipwreck. The unfortunate Lally, who commanded in the town, immediately dispatched letters to the French agents at the Danish settlement at Tranquebar, and the Dutch settlement at Negapatam, commanding, exhorting, and entreating them to exert every means to send provisions into the town ere the blockade should be renewed. In some letters that were intercepted, written with uncommon animation, he says, that being deserted by man, heaven in pity of him, and in protection of the cause he defended, had come to his deliverance. In saying that he had been deserted by man, he seems to have alluded to M. d'Aché, the French admiral, of whom he ever bitterly complained, first for having left the coast, and secondly for deferring to return to it. On the second of January, admiral Stevens again anchored in the road; admiral Cornish soon after joined him; and in less than a week he had assembled there eleven ships of the line besides frigates, whose boats continually cruizing in all directions near to the shore, intercepted

to Bombay or the bay of Trincomaly on the island of Ceylon, or to Prince of Wales's island near the entrance of the straights of Malacca; and in addition to these they may now go to the Mauritius also.

In the North of India, or the Panjab, the rainy season commences about the middle, or rather the end of June; but the rivers begin to swell with the first heats of spring and summer, by the melting of the snow on the mountains contiguous to their sources. It appears that Alexander crossed the Indus sometime in the beginning of May;* he therefore probably found the

---

every vessel that attempted to reach the town. (See Orme's history, &c.)

The introduction of this event may perhaps appear irrelevant: but it shews the nature of the storms to be apprehended at the change of the Monsoon.

The conduct of Stevens may serve as an example worthy of imitation. He devoted himself to impending destruction, rather than prove deficient in what he conceived to be his duty.

* In the 11th year of his reign, and 29th of his age, 327 years before our æra. He was born on the 24th of our September, 356 years A.C. succeeded his father

rivers already swollen and constantly increasing. As he advanced, he had not only to encounter the difficulties which this circumstance alone must have opposed to his progress, but had afterwards to support the effects of heavy rains, and the extreme heats of the season. Tamerlane passed the Indus nearly at the same spot* where Alexander had crossed it 1725 years before, but he began his expedition in the month of October,† the early part of the cool season, when the rivers had retired within their banks. Nadir Shah crossed it 340 years after Tamerlane, about the same place, early in the month of January.‡ These two conquerors probably knew and calculated on the seasons, a point which Alexander seems to have neglected; but when he quitted India, he must have known their course. On his return from India, he sailed with his fleet from Nicæa

Philip in the year 336 A. C. and died at Babylon on the 19th of July, 324 A. C.

* The Taxila of the Greeks, now Attock.

† A. D. 1398. ‡ A. D. 1738.

on the Hydaspes, or Chelum, on the 23d October, 327 A. C. and, after various operations, arrived at Pattala, the present Tatta, next year, about the end of August, nearly ten months after leaving Nicæa. At Pattala he delivered the command of the fleet to Nearchus, assisted by Onesicritus, whose office seems to have been that of pilot. The fleet, after leaving the Indus, was to steer in a north-westerly direction towards Cape Eirus,* from thence to the mouth of the river Arabis, and then along the coast of Gedrosia† and Caramania towards the gulph of Persia. The army on land, after leaving Pattala, marched in two divisions, one commanded by Alexander in person, the other by Hephæstion: while Leonatus, with a corps of light troops, was ordered to keep near the coast, for the purpose of assisting the fleet, and transmitting intelligence of its progress. Alex-

* Now Cape Monze.

† The inhabitants of this coast were named Ichthyophagi, or fish-eaters.

ander went first through the countries of the Arabitæ and Oritæ, thence into Gedrosia, and forward towards Susa.

Nearchus began his voyage from the Indus sometime between the first and tenth of October, or nearly a month after Alexander left him. He consequently sailed when the Monsoon was about to change; though he kept along shore, and had thereby the advantage of the sea and land breezes, he nevertheless found it necessary to put into a port near to Cape Eirus, where he waited 24 days on account of the weather. Having again sailed, he arrived at the river Anamis* in Caramania, about the 10th of December of the same year. Receiving intelligence there, that Alexander was with his army at five days journey from him, he gave orders for the fleet to be drawn on

* Now Mina. The Andamis of Pliny, and Andanius of Ptolemy, seem to have been a distinct river from the Anamis, though some authors have confounded them with it. See Gosselin, "Recherches sur la Géographie Systematique et Positive des Anciens," tome iii. pp. 111 et 112.

shore, and a fortified camp to be formed for its security; he then set out with a few of his companions towards the spot where he was told he should find Alexander, and shortly after had an interview with him. It appears that Nearchus left the Anamis about the first of January, 325 A.C. and arrived in the Pasitigris* in Susiana, the tenth of February.†

* The Pasitigris has by some geographers been supposed to be a branch of the Tigris; but it appears that they are distinct rivers, the former to the East of the other. The Euleus, or a branch of the Euleus, flowed close to Susa, and united with the Pasitigris in about N. Lat. 30° 26′. Alexander embarked at Susa on the Euleus and descended the stream, whilst Nearchus ascended the Pasitigris from the place where it discharges itself into the Persian Gulf. Hence naturally they met each other.

† Reckoning from the 10th of October to the 10th of February, the voyage appears to have taken 123 days. Nearchus even in the tedious mode of navigating then in use, might have performed it in much less time than he employed, but it was a voyage of survey and discovery. In a dispute between him and Onesicritus with respect to the course to be steered, Nearchus observed, that Alexander had not sent the fleet for the purpose of

The wonderful efforts made by the Tyrians to defend themselves, when left entirely to their own exertions, were sufficient to convince Alexander of the importance of maritime power, and of the wealth and resources to be derived from commerce. He also had opportunities of learning the particulars of the traffic carried on by the Phenicians with the East. He seems to have felt what was said by Cicero two hundred years after him, "Qui *mare* tenet, eum necesse est rerum potiri." When he succeeded to the throne of Macedonia, the trade with India was carried on wholly by the Tyrians. The merchandize was brought by the Red Sea, or Arabian Gulf, to a port at the bottom of that gulf, and from thence transported across the deserts to Rhinoconura, a town of the Mediterranean on the frontiers of Palestine and Egypt. From Rhinoconura, the products of India

---

transporting those on board to their destination, but to obtain a knowledge of the coasts, and to ascertain the best time and mode for navigating those seas.

were carried by sea to Tyre, and were thence circulated through different parts of Europe. After the conquest of Egypt, it appears that Alexander early conceived the plan of forming a direct intercourse through that country with India. He resolved to replace Tyre* by a city better adapted to his views. For this purpose he chose a spot on the coast of Egypt to the westward of the mouths of the Nile, which enjoyed the advantage of being covered towards the sea by the island of Pharos. He there founded the city which still bears his name, and from which communications were opened by canals both with the Nile and the lake Mareotis. The architect who directed those works, is said to have been

* Old Tyre was taken by Nebuchadnazar, king of the Assyrians, 572 years B. C. New Tyre was raised, opposite to the old city, on a small island, or spot of land separated from the continent by an extremely narrow channel of the sea. It had even surpassed the ancient city in wealth, when it was taken and destroyed by Alexander 332 years before our æra. It was restored under the Seleucidæ, but never more attained its former splendour.

Dinocrates, a native of Macedon; and who, we are informed, was employed to rebuild the famous temple of Ephesus. Arrian assures us that Alexander's fleet on the Indus was equipped for the express purpose of opening the intercourse between India and Alexandria.* Nothing can more fully

---

* This fleet, when it sailed from Nicæa, is said to have consisted of nearly 2000 vessels of different sizes, and among them were 80 trireme gallies: nor does Rennell think this number exaggerated. It was in the first instance to transport a great part of the army and baggage to Pattala or Tatta; and there a due number of vessels was chosen out of it, for the voyage that was to be undertaken by Nearchus.

"It may appear extraordinary that Alexander should, in the course of a few months, prepare so vast a fleet for his voyage down the Indus; especially as it is said to be the work of his army. But the truth is, that the Panjab country, like that of Bengal, is full of navigable rivers; which communicating with the Indus, form an uninterrupted navigation from Cashmere to Tatta; and, no doubt, abounded with boats and vessels ready constructed to the conqueror's hands. That he built some vessels of war, and others of certain descriptions which might be wanted, is very probable; but transport and provision vessels, I doubt not, were to be collected to

prove his anxiety to accomplish this object, and the importance he attached to it, than his interview with Nearchus when he came to him from Anamis. Being informed that he was accompanied only by Archias and five other persons, he conceived that his fleet had perished by shipwreck. The tattered garments and long beards of Nearchus and his companions, confirmed his fears. Leading Nearchus aside, to hear, unobserved, what he had to relate to him, he seemed fearful of questioning him; but, recovering his composure, he said, "Nearchus, I am glad to find that you and Archias are safe, but tell me where and in what manner did my fleet and troops perish."—"Your fleet and troops are safe," replied Nearchus, "we have come purposely to inform you."—"Where then are they?"—

any number. I think it probable, too, that the vessels in which Nearchus performed his coasting voyage to the Gulf of Persia, were found in the Indus. Vessels of 180 tons burthen are sometimes used in the Ganges; and those of 100, not unfrequently."—*Rennell's Memoir of a Map*, p. 192, edit. 1793.

"At the Anamis, preparing to prosecute their voyage."—In the joy he felt in being thus suddenly and unexpectedly relieved from all his pain, he burst into tears, and exclaimed; "by the Lybian Ammon, and Grecian Jove, I swear to thee, that I am made happier by receiving this intelligence than in being conqueror of Asia; for I should have considered the loss of my fleet, and the failure of the enterprize it has undertaken, as almost outweighing in my mind all the glory I have acquired."*

Ptolemy Lagus obtained Egypt, as his portion of the succession of Alexander; but the wars in which he was engaged did not prevent him from bestowing an assiduous attention on the improvement of the countries which had thus fallen to his share, or of those he afterwards conquered. Knowing that his late sovereign had founded the city of Alexandria with the view of making it the great emporium of trade, and point of communication between the east and

* See Arrian's Account of India: Amsterd. Edit. p. 576, et seq. 1658.

Europe, Ptolemy established the seat of government there, and for the security of vessels navigating in the night, he caused a lofty light-house to be erected on the island of Pharos, which was executed with such art and magnificence, by the famous architect Sostratus, as to excite the admiration of all who visited it. Secure in the undisturbed possession of Egypt, he afterwards made himself master of Cœlo-Syria and Phenicia: entered Judea; took Jerusalem; and sent about a hundred thousand captives into Egypt; numbers of whom he settled at Alexandria, and granted them their freedom. Ptolemy Lagus, now called Soter, dying in the year 285 B. C. at the age of ninety-two, was succeeded by his son Ptolemy Philadelphus, who particularly applied himself to complete the plan projected by Alexander, and afterwards prosecuted by his father. It appears that he once intended to form a canal, which is said to have been begun by Nechos,* and was to extend from the place named Ar-

* Called in the Scriptures, Pharao Necho.

sinoe,* to the Pelusiac branch of the Nile; a work which he afterwards abandoned; but, in order to lessen the dangers and delays with which the navigation of the Arabic Gulf is fraught, especially towards the bottom of it, where Arsinoe stood, he caused a city to be built, named Myos Hormus, on the western coast of the gulf, above Arsinoe. Another city was afterwards raised on the same coast, still nearer to the mouth of the gulf, named Berenice: some have attributed the founding of this city also to Philadelphus, but there is reason to believe that it was built by his son Ptolemy Evergetes, and that the name Berenice was given to it to commemorate the virtues of his queen, and the extreme love he bore to her. Berenice became the principal port; whence the merchandize brought from the east, was transported across the desert of Thebais to Coptos, a city about 258 Roman miles from

* A city built by Ptolemy Lagus, near the spot where Suez now stands.

Berenice, and about three from the Nile, to which it was conveyed by a canal, and thence down the stream towards Alexandria. The desert of Thebais being almost destitute of water, cisterns were constructed at certain distances on the road, for receiving what fell from the heavens, as well as what might be conveyed from neighbouring springs.

The ships destined for India, after leaving the ports in the Arabian gulf above mentioned, sailed along the shore to the promontory of Syargus, now cape Rasalgate, and from thence proceeded in the same track which Nearchus had pursued on coming from India. The commerce with India under the descendants of Ptolemy Lagus, seems to have been confined to the maritime places which Alexander had visited there, but chiefly to Pattala, now Tatta, at the head of the lower Delta of the Indus. On the death of Cleopatra, daughter of Ptolemy Auletes, Augustus took possession of Egypt as a conquered country; but instead of declaring it a province of the Roman empire,

he retained it under his own immediate authority. So jealous was he of interference in regard to it, that a decree was issued, forbidding any one to go thither without his special permission; and the same system must have been as scrupulously observed under his successor, for we find the going to Egypt without leave, one of the articles of accusation brought by Tiberius against Germanicus, to the senate.*

Under the Romans the commerce with India was increased, and carried to countries south of the Indus. At Barugaza,† situated on the gulf Baragenesus‡ and river Narbudda, the traders found a more abundant and convenient mart than at Pattala. From the interior parts of the country, but especially from the cities of Plithana, supposed to be the place now called by the Hindūs, Pultanah; and from

---

* A. D. 19, and in the fifth year of Tiberius.—*Taciti Annales*, lib. ii. c. 59, 60.

† The present Baroach.

‡ Now Cambay.

Tagara,* named by Rennell, Deoghir, various sorts of goods were transported by land-carriage to Barugaza.

The voyage to India as hitherto practised, not only occasioned great loss of time, and

* Doctor Vincent, on the authority of Mr. Wilford, supposes Tagara to have been situated where the famous temples and excavations of Ellora are seen, in the vicinity of Dowlatabad, in the northern part of the Deckan. He mentions engravings on plates of copper found on the island of Salsette, near Bombay, in which the city of Tagara is mentioned. These plates were procured by General Carnac, and sent by him to Sir William Jones, while president of the Asiatic Society, at Calcutta. Mr. Carnac informs the president, that none of the Guzerat Brahmins who had been consulted, could explain the inscriptions. They were, however, translated by a learned Pundit, at Calcutta, named Ramalochan, who certainly knew nothing of the Periplus of Arrian, but the name of the city as written by Ramalochan was found, on pronouncing it, to correspond with the Greek name Tagara. In mentioning the prince who made the grant, it is said: "Aricësari Dëvarajah, &c. &c. descended from the stock of Jimŭlavahana, king of the race of Silar, sovereign of the city of Tagara, ruler of the whole region of Cancana, &c."

For the grant see Asiat. Res. London edit. vol. i. p. 357; and for Remarks on the city of Tagara, p. 361, of the same volume.

consequently increase of expense, but was exposed to risks which in the modern and more perfect state of navigation are avoided. In the course of those voyages, the persons who conducted the vessels must have noticed the regular direction and shiftings of the Monsoons. Whether from a resolution taken in consequence of such observation, or whether by accident, as is alleged, it was not until the reign of Claudius, that is, sometime between the year of Christ forty-one and fifty-four, or full 370 years after the voyage of Nearchus, that the tedious mode of keeping near the shores was abandoned. Pliny informs us that Hippalus, a freed man of Annius Plocamus, being sent by him in a vessel to collect the customs of the Red Sea, which Plocamus farmed from the Emperor, was driven by a strong wind into the Erythrean *

---

* The Erythrean appears to us to have been the sea extending along the coast, from the gulf of Arabia to the gulf of Persia. According to fabulous story, the name was given to it in commemoration of the death of

sea and Indian ocean, and arrived after a short voyage at a place which he names Hipparus, on the island of Taprobane, or Ceylon,* or, according to other authors at Musiris, on the coast of Malabar; the latter account appears to us the most reasonable. In consequence of this discovery, instead of coasting, when going to or coming from India, the more expeditious method of sailing in a direct course was adopted. After that epoch we find traders frequenting various places on the coast of Malabar; one of these was named by the Greeks, Zizerus, the

---

Erythras, son of Perseus and Andromeda, who was accidentally drowned there.

* This island is named by Cosmas, the monk, Sielidiba, which approaches very nearly to Serendib, the name by which it is known over all the east. Cosmas, during the reign of Justinian, after different voyages to India, retired into a monastery, where he composed several works. Although his topography is full of extravagant hypotheses, and he seems absurdly credulous, like the ancient Greek authors, and the modern Tavernier, he relates what he really himself saw, with truth and simplicity.—*See Collection des Ecrivains Grecs, par le Père Montfaucon.*

position of which has not yet been ascertained; another was Murcis, supposed to be Calicut, and finally they can be traced round Cape Comorin, purchasing pearls from the fishery at Tuticorin in the Gulf of Manar, and proceeding to and mounting the Ganges. From Berenice, ships sailed for India in the months of June and July, and began their voyage homewards in December.

Besides the productions of the great peninsula of India, some of those of China, the spice islands, and the Golden Chersonesus,* were also brought to Egypt; but as the traders from thence had no direct

* To fix this Chersonesus, has excited much learned inquiry; but that it meant the coasts of Ava, Pegu, and Malacca, perhaps Siam also, is the opinion that now most generally prevails.

It appears that the Hindus carried on maritime commerce at a very remote period. We have already mentioned a law of Menu respecting money lent on bottomry. (See vol. i. p. 35.) But besides what may have been brought to India from China by sea, it appears that the productions of that country were also brought by land through Thibet to the banks of the Ganges.

intercourse with those last mentioned countries themselves, Dr. Robertson supposes this to have been one of the reasons why silks continued to bear such immense prices at Rome, even in the time of Aurelian,* above two hundred years after it was first introduced there. This observation is founded on a belief entertained by the learned author, that silk, at that time, was produced in China only; and that the price of what was brought to Rome, was enhanced by the charges of such circuitous course, and by the profits of the different merchants through whom it was procured. But the opinion that the silk-worm was peculiar to China, is unquestionably erroneous. In the laws of Menu two classes of persons are mentioned as specially appropriated to the care of the silk-worm and the spinning of silk; they had names expressive of their occupations, and they yet continue to follow them from father to

* Aurelian was elected Emperor in the year of Christ 270.

son in the same manner as is observed by the Hindūs in all other avocations. In the ancient Sanscrit language there are names for the silk-worm and silk. On the first acquaintance of the Greeks with the Hindūs, we find silks mentioned, when speaking of their dresses. Sir William Jones observes, that "silk was fabricated immemorially by the Indians."* The author of Remarks on the husbandry and internal commerce of Bengal, when speaking of the culture of the mulberry, and the process of the Hindūs in regard to silk, mentions silk obtained from *wild worms*, which feed on other plants besides the mulberry. He says, "much silk of this kind supplies home consumption; much is brought from the countries situated on the N. E. border of Bengal, and on the southern frontier of Benares; much is exported wrought and unwrought to the western parts of India; and some enters into manufactures which

* See Sir Wm. Jones's Third Discourse to the Asiatic Society. (Works, vol. iii. p. 42.)

are said to be greatly in request in Europe." He speaks of five kinds of silk-worms, but adds, that the one called *Desi,* or *native,* is preferred. He estimates the export of raw silk from Bengal, at from 150 to 200 tons annually, but observes that it might be greatly increased.*

---

* After speaking of silk, he says: "The manufacture of indigo appears to have been known and practised in India at the earliest period. From this country, whence the dye obtains its name, Europe was anciently supplied with it, until the produce of America engrossed the market. Within a very late period, the enterprise of a few Europeans in Bengal has revived the exportation of indigo, but it has been mostly manufactured by themselves. The nicety of the process, by which the best indigo is made, demands a skilful and experienced eye. It is not from the practice of making some pounds from a few roods of land that competent skill can be attained: yet such was the management of the natives. Every peasant individually extracted the dye from the plants which he had cultivated on a few *biswas* of ground; or else the manufacture was undertaken by a dyer, as an occasional employment connected with his profession. The better management of the Americans in this respect, rather than any essential difference in the process, transferred the supply of the market to America; for, it is now well ascertained

But if the commerce with India became a source of fortune to the industrious trader, and an important branch of revenue to the government, the introduction of the products of the East also tended to stimulate and increase the already excessive luxury which prevailed at Rome. In the Periplus of the Erythrean sea by the navigator Arrian,* an account is given of the imports

that the indigo of Bengal, so far as its natural quality may be solely considered, is superior to that of North America, and equal to the best of South America."—*See Remarks on the Husbandry and internal Commerce of Bengal, published at Calcutta in* 1804, *republished at London in* 1806, p. 154.

* This Arrian must not be confounded with Flavius Arrian, the historian of the Expedition of Alexander. The author of the Periplus appears to have been a trading navigator in the seas described by him, and to have personally visited the coasts of the Red Sea, part of those of Arabia, Africa, and Malabar in India. There are some things in the Periplus contradictory to what is said by the other Arrian. He supposes Alexander to have advanced to the banks of the Ganges; whereas, according to Flavius Arrian, he never even crossed the Jumna. The time of the existence of the author of the Periplus has not been ascertained, but it must have

from India, and in the Roman Digests the articles subject to duties to the government are enumerated.*

The imports from the East consisted of Cotton cloths, white and coloured; Muslins, plain, flowered, striped, and embroidered; Silks; and, though shawls are not specified, yet *Marucorum Lana,* which Dr. Vincent supposed to be the wool of which the shawls are made, is mentioned; Medicinal drugs; Ferrum Indicum, tempered iron or steel; Spices and Aromatics,† in the

---

been after the Romans had conquered Egypt, and before Arrian the historian. See Vincent, vol. i. p. 45.

* Digest, lib. xxxix. tit. iv. Doctor Vincent, in an Appendix to the second volume of his work on the navigation to India, gives a list of the articles mentioned in both the Periplus and Digest.

† Amongst the aromatics, the *Nardi Stachys*, mentioned in the Digest, and the Nardi Spica in the Periplus, appears to have been what is named by Roxburgh and others, Spikenard. Dr. Vincent observes, that no Oriental aromatic has caused such controversy among the writers on natural history, and that it is only within these few years that we have arrived at the true knowledge of it, by means of the inquiries of Sir William Jones and

list of which all those now brought from India are to be found; frankincense; odoriferous gums, woods, and ointments; sugar, called *honey from canes*;* tortoise-shell; ivory; porcelain; precious stones and gems of various kinds, as emeralds, sapphires, topazes, amethysts, hyacinths,

---

Dr. Roxburgh. See Vincent, vol. ii. p. 742.—Asiatic Researches, vol. ii. p. 405, and vol. iv. pp. 97 and 433. —And Roxburgh's Plants of the coast of Coromandel, in which there are beautiful coloured drawings of the Spikenard.

* *Lotos Honey* is also mentioned, which it is difficult to account for: we do not conceive that sugar could be procured from the berry of the Ramnus Lotus, which is a farinaceous plant, and we know that the Nymphæa Lotus is held sacred by the Hindūs, and preserved with religious care. (See vol. i. p. 151—157.) This article is not in the Digest, but in the Periplus only, the author of which says that it was brought from Barugaza. I am inclined to think that the name Lotus must be an error, arising either from the ignorance of the author, or an inadvertency in copying; for if sugar could be extracted from the Nymphæa, and it were even permitted by the Hindūs, the quantity procured from so rare a plant, must have been too inconsiderable to furnish an article for exportation.

and diamonds, which were brought to a great amount; the ruby is not specifically mentioned, but it seems improbable that it should have been neglected, and may, perhaps, have been confounded with other red coloured stones both in the Digest and in the Periplus; what is named *Alabanda* in the Digest, Dr. Vincent, on the authority of Dutens,* calls a stone between a Ruby and Amethyst. To these are to be added the *Lapis Callainus*, or Callain stone, a species of Emerald.† Various kinds of what are called *Fine Stones* to distin-

---

* Des Pierres précieuses, et des Pierres fines, par M. L. Dutens.

† See Dutens, c. vii. p. 36. This author denies that the ancients had any knowledge of the true emerald; and says that the green gems, called *Smaragdus*, were of an inferior quality to the emeralds brought from Brazil and Peru. I conceive, however, that in this respect he is mistaken. Had I attended to the circumstance sooner, I should have mentioned it to him; and as he was ever open to conviction, I think he would have admitted his error. Unfortunately, we have now to regret his loss. Emeralds of great beauty are seen in India; I possessed one such myself, which I procured there: they are to be found, I believe, in Pegu and Ava.

guish them from what are termed *Precious Stones,* were also brought from India; the Onyx and Cornelian were principally employed for engravings; the Sardonyx, and other Agates, in works of curiosity and drinking cups; but stones of sizes fit for these being extremely rare, and much admired, bore proportionately high prices. The Onyx is mentioned as being brought from Tagara, and fine Onyxes are now found in that part of the Deckan, more frequently, I believe, than in any other part of India.

But it appears that the gems, most esteemed by the Roman ladies, were Pearls, which were purchased with eagerness, and when of great size and beauty, at a prodigious expense. The sum paid by Julius Cæsar for one that he gave to Servilia, the mother of Marcus Brutus, is stated at forty-eight thousand four hundred and fifty pounds sterling; and the famous pearl ear-rings of Cleopatra have been valued at one hundred and sixty-one thousand four hundred and fifty-eight pounds. Pliny observes, that the prices of pearls exceeded those of any other

gems; that there was not a female without some pearl ornament, saying, *they were as necessary to a woman when she appeared in public, as the Lictor to the magistrate;* that not only the knots, but the whole of the shoes were to be found covered with them; and he mentions having seen Lollia Paulina, the wife of the Emperor Caius,* not at a festival, or public ceremony, but at a common marriage supper, with pearls and emeralds which had cost forty millions of Sesterces:† and these were not, says the author, jewels

* Caligula, son of Germanicus, and successor of Tiberius.

† The common, or small Sesterce, has by some been valued so low as two French sols, or a penny English; by others more.

"Le *sestertius nummus* des Romains," says the learned Chevalier Visconti, in a communication to the author, "valoit deux As et demi de leur monnoie; mais il ne faut pas inférer de cette valeur que le sesterce Romain, doit être évalué à deux sous et demi, monnoie de France. Une infinité d'anciens *Denarius* Romains existent en nature: la plupart sont connus sous le nom de *Médailles de famille en argent.* Il est certain que ces *Denarius* contiennent autant d'argent pur que nos francs actuels en contiennent. Or si le *Denarius* qui valoit dix As, équivaut à peu-près à un franc, le *Sestertius* qui formoit

given to her by the profuse Caius, but came to her from her grandfather, Marcus Lollius.

Silks were for a long time used by the women only. Besides the expense of a silk dress, it was judged too effeminate for men. The Greeks and Romans, as long as they preserved their ancient character, wore nothing but woollen garments. But some must have put on silk so early as about the third year of the reign of Tiberius, or seventeenth year of the Christian æra: for we find in a motion made in the senate, for passing a law to restrain the excessive luxury that prevailed, a prohibition for men from using silk dresses.* The dissolute

---

la quatrième partie du *Denarius*, sera l'équivalent de cinq sous."

If therefore the Sesterces here mentioned be taken at five sols French money, it will make those jewels amount to ten millions of francs, or about 416,666 pounds sterling.

* Decretumque ne vasa auro solido ministrandis cibis fierent; ne vestis serica viros fœdaret.—*Tacit. Ann.* lib. ii. c. 33.

Heliogabalus, above two hundred years afterwards, is said to have been the first that ventured to wear a *Holosericum*, or garment wholly made of silk; but before that time it appears that persons of rank had worn the *Subsericum*, or garment of a texture of silk and wool.

Pliny, when speaking of muslin, terms it, "a dress, under whose slight veil our women contrive to shew their shapes to the public."

The consumption of spices and aromatics by the Romans, was so great as to exceed belief, were not the circumstances that prove it transmitted to us by authors whose testimony cannot be rejected. Much frankincense and other aromatics were employed in sacred functions, but the consumption of them by individuals greatly exceeded these. At the funeral of Sylla, forty-eight years before Augustus took possession of Egypt, it is said that *two hundred and ten burthens* of spices and aromatics were strewed upon the pile; and Pliny observes that Nero caused a quantity to be

burnt at the obsequies of Poppæa,* greater than what he supposes the countries from which they were imported could produce in the year. Though those assertions may be exaggerated, they shew at least that a most profuse use was made of those articles on particular occasions. He observes *that heaps were consumed* on the carcases of the dead, whilst only grains were offered to the gods.†

Cinnamon appears to have been in great demand. The fine Cinnamon is produced on the island of Ceylon only; different species of inferior kinds are found in various parts of India. Pepper was then, as now, produced on the coast of Malabar; quantities may also have been brought from the island of Sumatra into the penin-

---

* A. D. 65.

† Periti rerum asseverant, non ferre tantum annuo fœtu, quantum Nero princeps novissimo Poppææ suæ die concremaverit. Æstimantur postea toto orbe singulis annis tot funera, acervatimque congesta honori cadaverum, quæ Diis per singulas micas dantur.—*Plin.* lib. xii. c. 41. (tom. ii. p. 343. edit. Bipont.)

sula of India, as well as spices from the Molucca islands, and purchased in the peninsula by the traders from Egypt and Persia. Besides the aromatics brought from India, considerable quantities were likewise brought from Arabia.

The exports to India consisted chiefly of light woollen cloths for the use of the inhabitants in the northern provinces; brass and copper vessels; tin brought by the Romans from England; lead, coral, glass vessels, oil of olives, storax, partly the produce of Italy, but chiefly of the Grecian islands; some wrought silver, but principally bullion. Pliny states the balance against Rome of trade with the East at a hundred millions of Sesterces, or 1,041,666 pounds sterling.*

It appears that, before the expedition of Alexander, the productions of India were brought into the Persian dominions by land, and continued to be conveyed thither under Seleucus Nicator and his successors.

* See Pliny, lib. xii. c. 41.

About 250 years before Christ, the Parthians, under their leader Arsaces, having made themselves masters of Persia, formed with their ancient possessions a power that often successfully disputed that of the Romans.* The Arsacidæ, or race of Arsaces, continued to reign over Persia 477 years, when in the year 227 of our æra, the reigning prince, named Artaban, was assassinated and the Parthians expelled, by a Persian who afterwards took the name of Ardshir or Artaxerces, whose dynasty, named Sassanidæ, continued to reign over Persia until it was conquered by Omar. second Calif from Mohammed, in the year of Christ 632.

Besides the productions of India, which

* The Parthians before their conquests, possessed only the hilly tract of country bordering on Aria. They afterwards extended themselves W. and N. W. towards the Caspian. Their capital, which is said by Ptolemy, to lie in the middle of their dominions, was named Hecatompylos. Under Darius Hystaspes their country was included in the 16th Satrapy or Viceroyship of his empire.

from a very remote period were brought into Persia by land, it appears that after the expulsion of the Parthians a commerce between the two countries was opened by sea. The commodities brought from India into the Persian Gulf, were, by means of the Euphrates and Tigris, and from these by caravans, distributed through every part of the Persian Empire. Though transporting them to Persia by sea, must have abridged the time, and lessened the expense of the mode formerly in use, it appears, nevertheless, that the practice of carrying goods by land, was still continued, though probably in a less degree than before the intercourse by sea was opened. The productions of India and China were now brought into Europe from Persia as well as Egypt. Besides those of China which were purchased in India, and brought from thence into the Persian and Arabian Gulfs by sea, some, and especially raw and wrought silks, were brought directly from China into Persia by land: the caravans setting out from Bokhara, situated on

the river Politemus, and passing by the city now named Samarcand,* also situated on that river, proceeded to the frontiers of China, and again returned by the same route. The Indian and Chinese commodities that were destined for Europe, were transported to the borders of the Caspian, embarked there, and from the opposite shore carried to ports on the Euxine; where being again embarked, they passed through the Bosphorus to Constantinople and other ports in the Levant. In less remote times goods brought from India by sea, were also landed at Bassora, from thence conveyed to Aleppo, and afterwards to Scanderoon and Tripoli.

But the inland commerce between India

* Samarcand, the Maraganda of Strabo and Pliny.—The Politemus or Sogda, which flows by it and Bokhara, discharges itself into the Oxus or Gihon beyond Biband in N. Lat. 37° 45′.

At Bokhara there was a rich silver mine; another at a place named Aderbigian; and another at Shiraz; the two former we believe still continue to be wrought, but the latter is said to be at present neglected, the quantity procured being unequal to the charge of working it.

and China, and the dominions of the Greek Emperors, was frequently interrupted, and constantly exposed to the arbitrary exactions of the Persian government. The luxury which prevailed in the Byzantine empire, exceeded, if possible, that mentioned to have been practised at Rome; and, at both places, to have been deprived of what served to gratify vanity, or sensual appetite, would have been considered as a misfortune.

Justinian ascended the throne of Constantinople in the year of Christ 527, and Khosroes, surnamed the Great, of the Sassanide race, that of Persia in 531. Justinian found the empire engaged in war with the Persians, from whom in 532 he obtained peace on condition of paying a tribute to Khosroes, and putting him in possession of the passes of Caucasus. A second war broke out between them in 540, and was continued, with the intervention of some short truces, for about twenty years, during which time the commerce through Persia to Constantinople was almost entire-

ly suspended. But in the course of this war, an unforeseen event introduced the culture of silk into the Greek Emperor's own dominions. Two Persian Monks employed as Christian missionaries, having penetrated into the country of the Seres, or China, had occasion to observe the labours of the silk-worm, and the progress of fabricating its productions. Too pious to communicate their discoveries to their unbelieving countrymen, in the year 555, they repaired to Constantinople and explained them to the Emperor. They even undertook to bring silk-worms to his capital, which they afterwards accomplished, by secretly conveying the eggs of those insects, in canes hollowed for the purpose. These being afterwards hatched by the heat of dung, and fed with the leaves of the mulberry-tree, grew into maturity, and speedily multiplied. Numbers of the insects were reared in different parts of Greece, particularly at Athens, Corinth, and various places in the Peloponnesus. From Greece they were carried into Sicily and Italy, and

subsequently into other countries. In process of time, considerable manufactures of silk were established in different parts of Europe. The importation of wrought silk from the East gradually declined, but owing to the great consumption of that article, as well as on account of the quality, considerable quantities of raw, or unspun silk continue to be brought both from India and China.

In 561 a treaty of peace for fifty years was concluded between Justinian and Khosroes, in which some stipulations were made in regard to commerce.

Desirous of avoiding whatever may be foreign to our subject, we are nevertheless led to take notice of some circumstances, which must necessarily have had influence on the intercourse and commerce with India.

Justinian died at Constantinople the 14th of November, 565, in the eighty-third year of his age, and 38th of his reign. He was succeeded by his nephew Justin, whose history is a continued scene of disgrace and

losses abroad, of oppressions and vexations exercised at home. His power was confided to ministers whose conduct caused their master to be despised, and his government detested. In 572 he imprudently, and in violation of the treaty above mentioned, renewed the war with the Persians. Khosroes immediately put himself at the head of his armies, and laid siege to Dara in Mesopotamia; while his general, Adarman, ravaged the country as far as Antioch, and took and reduced to ashes the city of Apamea. Dara, which was considered of high importance to each party for the security of their respective frontiers in that quarter, surrendered after an obstinate defence, and the feeble Justin now trembled for his capital itself. The events of this war, and the discontents that prevailed, induced him to resign his sceptre into abler hands. His only son by his wife Sophia, had died in infancy. Setting aside his own kindred, he chose for his successor a distinguished officer named Tiberius, who commanded the Imperial guards. The ceremonial of abdi-

cation and investiture was performed in the presence of the Senate, the Patriarch, and some of the principal clergy. Justin's speech on this occasion, as recorded by Theophylactus Simocatta, may serve as an instructive lesson to sovereigns in general.*

---

* The Emperor addressing himself to Tiberius, said: "You behold the ensigns of supreme power. You are "about to receive them not from my hand, but from the "hand of God. If you honour them, from them you will "derive honour. Respect the Empress your mother; "you are now her son; before, you were her servant. "Delight not in blood, abstain from revenge; avoid "those actions by which I have incurred the public "hatred, and consult the experience rather than the "example of your predecessor. As a man, I have sin-"ned; as a sinner, I have, even in this life, been pu-"nished: but these servants (pointing to his minis-"ters) who have abused my confidence, and encouraged "my passions, will appear with me before the tribunal "of Christ. I have been dazzled by the splendour of "the diadem: be thou wise and modest; remember what "you were—remember what you are. You see around "us your subjects and children; with the authority, "assume the tenderness, of a parent. Love your people "like yourself; cultivate the affections, and maintain the "discipline of the army; protect the fortunes of the rich—"relieve the necessities of the poor."

Theophylactus

The choice made by Justin of Tiberius was universally approved at the time, and justified by experience. To Justin he was an affectionate and grateful son; to his people, a just and protecting ruler. The virtues of the Byzantine prince were as conspicuously eminent as the vices of the Roman Emperor of that name, and which have rendered it proverbially odious.

Tiberius, soon after he mounted the throne, obtained a truce with the Persians for the term of three years. He began however actively to prepare for war. The army, which had been neglected during the late reign, was completed, and discipline restored. Khosroes when informed of the measures he was pursuing, resolved to anticipate his design. Dismissing the ambassadors of Tiberius, he again crossed the

Theophylactus, who wrote under Heraclius, about 32 years after the death of Justin, declares this speech to be exactly conformable with that pronounced by the Emperor. See Theophylactus, lib. iii. c. xi, Corpus Byz. Hist. Edition of the Royal printing Press, Paris, 1668.

his reign and 80th of his age, and was succeeded by his eldest son Hormouz, a prince unworthy to fill the throne of his illustrious father.

On the western side of the mountains of Imaus, named Altai, lived a tribe of people subject to the Khan of Geougen, or eastern Tartary. The country they inhabited was named by the Persians Turkistan, and its inhabitants Turks. Famous for its iron mines, the people were chiefly employed in working them, and in fabricating arms for the service of the Khan. A Turkish leader, named by some Bertezena, by others Toumouen, having, for some signal service performed by him, demanded in recompense the daughter of the Khan in marriage, his request was not only rejected, but the refusal accompanied with expressions of contempt. Indignant at the insult, he excited his countrymen to shake off their yoke.* The measures begun by Bertezena were completed under his successor Mokan.

* About the year 550.

After various struggles, the Khan was defeated and slain in a great and bloody battle, and his kingdom subdued. Such of the Geougens as continued to adhere to the family of their late prince, fled into other countries. The armies of the Turks soon became numerous; their soldiers, hardened by fatigue and climate, were stout, active and brave; and we find them in the course of a few years extending their conquests to the confines of the dominions of the Persian monarch, from which they were now separated only by the Oxus. From the countries most distant from their seat of government, they only exacted an acknowledgement of vassalage, and the payment of a moderate tribute. Their chief continued to prefer for his place of residence, a valley in the mountains of Altai, to richer countries and more delightful climes. A body of Geougens, who on the conquest of their country fled from thence, had found refuge in the territories of Justinian. An embassy was sent to him by the Turkish chief, requiring that the Geougen emigrants should

either be delivered to him, or obliged to quit his dominions. A second embassy was sent to his successor Justin;* and the prince of Sogdiana, vassal of Mokan, and employed by him on this occasion, was authorized to propose an alliance with Justin against Khosroes. Offers were also made for facilitating the commerce between the Byzantine empire and China; and it may have been in consequence of this treaty that the Turks menaced the Persian territories, just as hostilities were about to be renewed between Tiberius and Khosroes.

Egypt, while it formed part of the Christian Greek Empire, continued to be one of the chief channels of trade for Eastern commodities; but Omar after his conquest of Persia in 632, also in a very few years subdued Syria, Phenicia, Palestine, and Egypt. Under the Khalifs, the trade between India and Egypt seems to have been but in a languid state. The government of the Khalifs in Egypt, ended under

* Sometimes named Justinian II,

Adhad, who in 1169, having applied to Nurradin, king of Damascus, for assistance against the Christians, a large body of troops was accordingly sent to his aid, under the command of Saladin, a Curd soldier of fortune, who by his talents and services, had risen to great eminence, and gained the confidence of his sovereign. Saladin after defending Adhad deposed him, and proclaimed his master Nuraddin sovereign of Egypt: on the death of Adhad in 1171, Saladin assumed the government of Egypt in his own name, and on the death of Nuraddin, he also took possession of Damascus and all his other extensive territories. This Sultan, so well known in European history, for his victories over, and magnanimity towards, the Christians in the Holy Land, died at Damascus in 1193, at the age of 57 years, after a reign of 24. He was succeeded in the government of Syria by his eldest son Malek-Al-Afdhal, and in Egypt by his second son Malek-Al-Aziez. Saladin, soon after his taking possession of Egypt, had formed a chosen corps of

troops, of children of Christian captives, whom he caused to be educated in the Mohammedan religion. To this corps he gave the name of Mamluks, meaning, we believe, slaves. About a hundred years after the death of Saladin, the Mamluks, now a very formidable body, placed an officer of their own to rule over Egypt, and this mode of electing a chief on the demise of the one formerly chosen, continued until the year 1516, when Campson Gaurie, the last Mamluk ruler, was overcome and put to death by Selim I., and Egypt annexed to the Othoman Empire.

The Othomans, after having stripped the Christian Emperors of all their possessions in Asia, carried their conquests in Europe under Amurath I., almost to the walls of Constantinople; which was finally taken in 1459, by Mohammed II., when the last Greek Emperor, Constantine Paleologus, perished in the assault.

The Venetians, in consequence of arrangements with the Greek Emperors, had, from about the middle of the sixth century,

sought to engross the supplying of the western parts of Europe, with the productions of the East: but in the republic of Genoa they found a formidable rival to contend with, both in maritime commerce, and for superiority of naval power. The Genoese not only frequented the ports of the Mediterranean, but even some on the Euxine sea, where the Greek Emperors, in reward for services rendered by them,* al-

---

* In assisting to recover Constantinople from the Western Christians, who had kept possession of it fifty-seven years; and also for having relieved it when blockaded by a Venetian fleet.

The Croisaders took possession of Constantinople in 1204, and kept it until the 25th of July, 1261, when it was surprised and taken by Michael Paleologus. The chiefs, or, as they named themselves, Emperors, that governed Constantinople during those fifty-seven years were,

Baudouin, or Baldwin, Count of Flanders and Hainault, chosen in 1204.

His brother Henry, who succeeded him in 1206, and who was succeeded in 1216, by,

Peter de Courtenay, Count of Auvergne, who had espoused Iolanda, sister of the two former Emperors.

Robert de Courtenay, son of Peter, chosen in 1218.

Baudoin

lowed them to form establishments at Asoph, Trebisond, or Trapezium, and Caffa, or Theodosia. We also find a gift made to them of the city of Smyrna,* and a grant by Andronicus Paleologus, of a piece of ground near Constantinople, on which they began to build houses and magazines,—the same spot that is now named Pera.—The decline of the Genoese power in the Adriatic and Levant may be ascribed in the first instance, and indeed principally, to the immense loss sustained by them in their unsuccessful attack on the city of Venice, in 1379; from that epoch their influence in

Baudouin, or Baldwin de Courtenay, (brother of Robert) chosen in 1228, who, after the taking of Constantinople, escaped into Italy, where he died in 1273.

The late family of Courtenay was descended from king Louis VI. surnamed *Le Gros*, by Peter, his seventh and youngest son, who, early in the 12th century, married Elizabeth, the eldest daughter and heiress of Renaud de Courtenay, Count of Edessa. The male line of Peter, son of Louis Le Gros, became extinct in France, in the person of Charles Roger de Courtenay, who died in 1730.

* Ann. 1261.

the Levant, and with it their commerce, declined; whilst the Venetians became in a short time the only traders for eastern commodities. And though they were threatened to be excluded from this commerce in consequence of sending succours to Constantinople, when besieged by Mohammed II.; yet, having found means to pacify the Turkish government, they seem to have been afterwards as much favoured by it, as they formerly had been by the Christian Emperors.

The discovery of the passage round the Cape of Good Hope, by Vasco de Gama, in 1497, changed the course of trade between Europe and India. The first enterprize was a voyage of discovery only; but on the 10th of February, 1502, Gama was sent back to India with a fleet of twenty vessels of different sizes, and returned to Lisbon on the 1st of September, 1503, with thirteen ships laden with different products of the east. A great part of the traffic of Indian commodities was hence transferred to Lisbon, where it continued until after

the seizure of the kingdom of Portugal by Philip II. and the successful revolt of the people of the United Provinces against that prince. Many of the possessions that had been held in India by the Portugueze, were conquered by the Dutch, who now became the principal European settlers in India, and the chief traders with that country.—It was only on the 31st of December, 1600, that Queen Elizabeth granted a Charter to George, Earl of Cumberland, and others, permitting them to trade to India, under the title of *The Governor and Company of Merchants of London trading to the East Indies*. The first adventure was conducted by Captain James Lancaster, who sailed with four vessels in 1601; and returned in September, 1603; having performed his voyage in two years and seven months. Certain commodities continued however to be brought through Persia and Egypt into Europe, but of so little amount, as scarcely to have merited attention. The history of the commerce with India subsequent to that period, is foreign to our purpose.

CHAPTER XIV.

CONCLUSION.

WITH the first accounts we have of India, a mighty empire at once opens to our view; which, in extent, riches, and population, has not we believe been equalled by any one nation on the globe. We find an ingenious and refined system of religion and civil policy established; sciences and arts known and practised; and all of these evidently brought to the degree of perfection they had attained at that remote period, by the accumulated experience of many preceding ages. We see a country abounding in fair and opulent cities; magnificent temples and palaces; useful and ingenious artists employing the precious stones and metals in curious workmanship; manufacturers fabricating cloths, which, in the

fineness of their texture, and the beauty and duration of some of their dyes, have not hitherto been equalled by those of any other nation. Through that immense country the traveller was enabled to journey with ease and safety; the public roads were shaded with trees to defend him from the sun; at convenient distances, buildings were erected for him to repose in; a friendly Brahmin attended to supply his wants; and hospitality and the laws held out assistance and protection to all alike, to the stranger as well as native, of whatever faith or country, without prejudice or partiality.

Their laws, being interwoven with their religious doctrines, perhaps threw too great a preponderance on the side of the priesthood; but the evil which this might have occasioned, seems, in some degree, to have been rectified by the exclusion of the members of that order from temporal offices;*

* This law still exists in force with respect to the Brahmins, who are of the first class of the priesthood; but all who are not of that class, may, in consequence of the changes that have been produced by invasion and

so that while they guarded the people from tyranny, they secured to the sovereign the peaceable and lawful obedience of his subjects.

The sciences, being confined to a particular class, could not be so susceptible of that improvement which they may attain in countries, where the study of them is open to the public at large, and where genius is encouraged and respected in whatever sphere it may appear: the priests in Hindūstān seem early to have foreseen, that extension of knowledge among the other classes of the community, would produce the decline of their authority; and they therefore appear to have guarded against it, with an extraordinary degree of caution. Yet, with all the exceptions that can be made, we must allow, that the laws and government of the Hindūs tended, as much as any others with which we are acquainted, to procure peace, and promote

---

conquest, now follow other pursuits, provided they be exempt from manual labor. See Note B, infra.

happiness. They were calculated to prevent violence, to encourage benevolence and charity, to keep the people united among themselves, and to prevent their tranquillity from being disturbed by the introduction of foreign innovations.

It was never our intention to contend with those who have endeavoured to reduce the chronology of the Indians to the standard of that now in use with European nations; nor to range ourselves with others who have ventured to suppose, that much of what was promulgated, and taught by the legislator of the Hebrews, was learnt by him from the Egyptians, and by these from the Hindūs; or, in other words, that the laws of Moses are to be traced to Hindūstān. On this, we are ready to concur with a learned author;* who, while he admits that communications existed between the Egyptians and Indians, long before the birth of Moses, observes, that "this will in no degree affect the truth and sanctity of

* Sir William Jones.

the Mosaic history."* Men unwillingly renounce opinions in which they have been nursed, or which they have undertaken to defend:—and those who have been accustomed to admire the philosophers of Greece and Rome, will not easily be brought to admit, that, long before these existed, there were philosophers in India equal to the most celebrated of them, and who in certain sciences were their superiors; that,

---

* Jones's Works, vol. iii. p. 391, et seq.

He remarks in the same article, that "M. Sonnerat refers to a dissertation by Mr. Schmidt, which gained a prize at the Academy of Inscriptions, *On an Egyptian Colony established in India*: it would be worth while to examine his authorities, and either to overturn or verify them by such higher authorities, as are now accessible in these provinces. I strongly incline to think him right; and to believe that Egyptian priests have actually come from the Nile to the Ganga and Yamuna, which the Brahmins most assuredly would never have left: they might, indeed, have come either to be instructed or to instruct; but it seems more probable, that they visited the Surmans of India, as the sages of Greece visited them, rather to acquire than to impart knowledge; nor is it likely, that the self-sufficient Brahmins would have received them as their preceptors."

when the Greeks were yet in a state of barbarism, the Hindūs were enjoying the advantages of a regular system of civil polity; and that their knowledge, as far as inquiry has gone, appears to have been indigenous, and not furnished to them by strangers.

APPENDIX,

CONTAINING

NOTES AND ILLUSTRATIONS.

APPENDIX

OF

NOTES AND ILLUSTRATIONS.

NOTE A.

(Referred to, vol. i. p. 9.)

Hindū Accounts of Sandrocotus, King of the Prasii, and the celebrated Capital of Palibothra.

SANDROCOTUS, sovereign of the ancient Prasii, is in the Sanscrit language termed Chandra-Gupta, which, according to Mr. Wilford, means *him who was saved by the Moon.* "By Athenæus he is called Sandracoptos, by other writers Sandracottos, and by some Androcottos. He was called Chandra simply; and, accordingly, Diodorus Siculus calls him Xandrames, from Chandra, or Chandram in the accusative case; for, in the western parts of India, the spoken dialects from the Sanscrit do always affect that case."*

Sir William Jones, from a poem written by Somadeva, and a tragedy called the Coronation of Chandra, or Chandra-Gupta, "discovered, that he really was the Indian king

* Wilford, As. Researches, vol. v. p. 284.

mentioned by the historians of Alexander, under the name of Sandracottos. These two poems I have not been able to procure; but I have found another dramatic piece, intitled Mudra-Racshasa, or *the Seal of Racshasa*, which is divided into two parts: the first may be called the Coronation of Chandra-Gupta; and the second, the Reconciliation of Chandra-Gupta with Mantri-Racshasa, the prime minister of his father."*

By Hindū writers it is said, that Maha Nandi, king of Prachi or Prasii, had by a woman of the Sudra cast, a son named Nanda, who succeeded him. Nanda is described as victorious in war, and though fond of amassing wealth, just and wise in government. By his first wife, named Ratnavati, he had nine sons, and by a second, named Mura, Chandra-Gupta and others; who, to distinguish them from those of the first bed, were called, from their mother, Muryas. After the death of Nanda, Chandra-Gupta found means to exclude the race of Ratnavati, and usurp the crown.

" Diodorus Siculus and Curtius relate, that Chandram was of a low tribe, his father being a barber. That he, and his father Nanda too, were of a low tribe, is declared in the Vishnu-purana, and in the Bhagavat Chandram; and that he, as well as his brothers, were called Maurya, from his mother Mura; and as that word,† in Sanscrit, signifies a barber, it furnished occasion to his enemies to asperse him as the spurious offspring of one. Diodorus and Curtius are mistaken in saying, that Chan-

* Wilford, As. Researches, vol. v. p. 262.

† " See the Jutiviveca, where it is said, the offspring of a barber, begot by stealth, of a female of the Sudra tribe, is called Maurya: the offspring of a barber and a slave-woman is called Maurya."

dram reigned over the Prasii at the time of Alexander's invasion; he was contemporary with Sèleucus Nicator."*

Megasthenes was a native of Persia, and appears to have enjoyed the confidence of Sybertius, governor for Seleucus of Arachosia,† the present Candahar and Ghezni. He had been sent at different times into India by Sybertius, and afterwards by Seleucus, as ambassador to the king of the Prasii.

The country of the Prasii and the site of Palibothra, have occasioned so much discussion, that we are induced to state some of the opinions in regard to them, which appear the best entitled to regard.

Major Rennell says, that *the empire of the Prasii seems to have included most of the tract through which the Ganges flows, after it enters the plains of Hindūstān.*‡ But Mr. Wilford, using more positive language, observes:

" By Prachi, (in Sanscrit,) or the East, is understood all the country from Allahabad to the easternmost limits of Hindūstān: it is called also Purva, an appellation of the same import, and Purob in the spoken dialects. From Prachi is obviously derived the name of Prasii, which the Greeks gave to the inhabitants of this country. It is divided into two parts: the first comprehends all the country from Allahabad to Raj-mehal, and the western branch of the Ganges; the second includes Bengal, the greatest

---

* Wilford, As. Res. vol. v. p. 285.

† See Arrian, Exp. Alex. lib. v. p. 323, edit. Amst. 1668.

‡ Speaking of this river, he says, that, after quitting the mountainous tract in which it must have wandered above eight hundred miles, it receives in its course through the plains, eleven rivers, some of them as large as the Rhine, and none smaller than the Thames, besides as many more of lesser note.

part of which is known in Sanscrit under the name of *Gancara-desa,** or country of Gancara, from which the Greeks made Gangaridas, or Gangaridai, in the first case. Gancara is still the name of a small district near the summit of the Delta."

" The capital city of Prachi Proper, or the western part of it, is declared to be Raj-griha, or the royal mansion. According to the Puranas, it was built by a son of king Prithu, called Haryacsha. It was afterwards taken by Bala-Rama, the brother of Crishna, who rebuilt it, and assigned it as a residence for one of his sons, who are called in general Baliputras, or the children of Bala. From this circumstance it was called Balipura, or the town of the son of Bala; but in the spoken dialects it was called Bali-putra, because a putra, or son of Bali, resided in it. From Bali-putra, the Greeks made Palipatra and Palibothra, and the inhabitants of the country, of which it was the capital, they denominated Palibothri."

" Diodorus Siculus, speaking of Palibothra, says, that it had been built by the Indian Hercules; who, according to Megasthenes, as quoted by Arrian, was worshipped by the Suraseni. Their chief cities were Methora and Clisobora: the first is now called Mathura, the other, Mugunagur, by the Musulmans, and Calisapura, by the Hindūs. The whole country about Mathura is called Surasena, to this day, by learned Brahmins."

" The Indian Hercules, according to Cicero, was called Belus. He is the same with Bala, the brother of Crishna, and both are conjointly worshipped at Mathura; indeed, they are considered as one Avatara, or incarnation of

* This word I am assured by persons intimately acquainted with the Sanscrit, has never been met with by them in that language.

Vishnu. Bala is represented as a stout man, with a club in his hand. He is called also Bala-Roma. To decline the word Bala, you must begin with Balas, which I conceive to be an obsolete form, preserved only for the purpose of declension, and etymological derivation. The first *a* in Bali is pronounced like the first *a* in America, in the eastern parts of India: but in the western parts, and in Benares, it is pronounced exactly like the French *e;* thus the difference between Balas and Belus is not very great. As Bala sprung from Vishnu, or Heri, he is certainly Hericula, Heri-culas, and Hercules. Diodorus Siculus says, that the posterity of Hercules reigned for many centuries in Palibothra, but that they did nothing worthy of being recorded; and, indeed, their names are not even mentioned in the Puranas."

"In the Ganga-mahatmya, in which all places of worship, and others of note, on the banks of the Ganges, are mentioned, the present town of Raj-mehal is positively declared to be the ancient city of Raj-griha of the Puranas, the capital of Prachi, which afterwards was called Bali-putra."

"Raj-griha in Bengalee and Raj-mehal in Persian, signifies the same thing. It is also called by the natives Raj-mandalam; and by Ptolemy, Palibothra-mandalon, for Bali-putra-mandalam: the first signifies the royal mansion, and the second the mansion of the Bala-putras. In a more extensive sense, Mandalam signifies the Circle, or country belonging to the Bali-putras. In this sense we say Coro-mandel, for Cholo, or rather Iala-mandal."

"Here I must observe, the present Raj-mehal is not precisely on the spot where the ancient Raj-griha, or Bali-putra, stood, owing to the strange devastation of the Ganges in that part of the country for several centuries

past. These devastations are attested by universal tradition, as well as by historical records, and the concurring testimony of Ralph, Fitch, Tavernier, and other European travellers of the last century. When I was at Raj-mehal in January last, I was desirous of making particular inquiries on the spot, but I could only meet with a few Brahmins, and those very ignorant; all they could tell me was, that in former ages, Raj-mehal, or Raj-mandal, was an immense city; that it extended as far as the eastern limits of Boglipoore towards Terriagully; but that the Ganges, which formerly ran a great way towards the N. E. and E. had swallowed it up; and that the present Raj-mehal, formerly a suburb of the ancient city, was all that remained of that famous place. For further particulars they referred me to learned Pundits, who unfortunately lived in the interior parts of the country."

"In the Mudra-racshasa it is declared, that the city in which Chandra-Gupta, or Sandrocotus, resided, was to the north of the hills; and, from some particular circumstances that will be noticed hereafter, it appears that they could not be above five or six miles distant from it. Megasthenes informs us also, that this famous city was situated near the confluence of the Erannoboas with the Ganges. The Erannoboas has been supposed to be the Sone, which has the epithet of Hiran-ya-baha, or *gold wasting*, given to it in some poems. The Sone, however, is mentioned as a distinct river from the Erannoboas, both by Pliny and Arrian, on the authority of Megasthenes: and the word Hiran-ya-baha, from which the Greeks made Erannoboas, is not a *proper* name, but an *appellative*, (as the Greek Chrysorhoas) applicable, and which is applied, to any river that rolls down particles of gold with its sands. Most rivers in India, as well as in Europe,

and more particularly the Ganges, with all the rivers that come down from the northern hills, are famous in ancient history for their golden sands. The Cossoanus of Arrian, or Cossoagus of Pliny, is not the river Coosy, but the Cossanor Cattan, called also Cossay, Cossar, and Cassay, which runs through the province of Midnapoor, and joins the remains of the western branch of the Ganges, below Nanga-Cussan."

" The Erannoboas, now the Coosy, has greatly altered its course for several centuries past; it now joins the Ganges, about five-and-twenty miles above the place where it united with that river, in the days of Megasthenes; but the old bed, with a small stream, is still visible, and is called to this day, Puranah-bahah, the old Coosy, or *the old channel.* It is well delineated in Major Rennell's Atlas; and it joins an arm of the Ganges, formerly the bed of that river, near a place called Nabob-gunge. From Nabob-gunge, the Ganges formerly took an extensive sweep to the eastward, towards Hyatpoor; and the old banks of the river are still visible in that direction. From these facts, supported by a close inspection of the country, I am of opinion, that Baliputra was situated near the confluence of the old Coosy with the Ganges, and on the spot where the villages of Mynyaree and Bissunt-poor-gola, now stand; the Ganges proceeding at that time in an easterly direction from Nabob-gunge, and to the north of these villages. The fortified part of Palibothra, according to Megasthenes, extended about ten miles in length, while the breadth was only two; but the suburbs, which extended along the banks of the Ganges, were, I doubt not, ten or fifteen miles in length. Thus Dehli, whilst in a flourishing state, extended above thirty miles along the banks of the Jumna;

but, except about the centre of the town, consisted properly of only a single street, parallel to the river."

"The ancient geographers, Strabo, Ptolemy, and Pliny, have described the situation of Palibothra in such a manner that it is hardly possible to mistake it.

"Strabo, who cites Artemidorus, says, that the Ganges, on its entering the plains of India, runs in a south direction as far as a town called Ganges, (Ganga-puri) now Allahabad, and from thence, with an easterly course, as far as Palibothra; thence to the sea, (according to the Chrestomathia from Strabo) in a southerly direction. No other place but that which we have assigned for the site of Balipatra, answers to this description of Artemidorus."

"Pliny, from Megasthenes, who, according to Strabo, had repeatedly visited the court of Chandra-Gupta, says, that Palibothra was 425 Roman miles from the confluence of the Jumna with the Ganges. Here it is necessary to premise, that Megasthenes says, the highways in India were measured, and that at the end of a certain Indian measure (which is not named, but it is said to be equal to ten stadia) there was a *cippus*, or sort of column, erected. No Indian measure answers to this, but the Brahmeni, or astronomical coss of *four* to a *yojana*. This is the Hindu *statute* coss. It is used to this day by astronomers, and by the inhabitants of the Panjab; hence it is very often called the Panjabi-coss: thus the distance from Lahor to Multan is reckoned, to this day, to be 145 Panjabi, or 90 common coss."

"In order to ascertain the number of Brahmeni coss, reckoned formerly between Allahabad and Palibothra, multiply the 425 Roman miles by eight, (for Pliny reckoned so many stadia to a mile) and divide the whole by ten, (the number of stadia to a coss according to Megas-

thenes) and we shall have 340 Brahmeni-coss, or 417-18 British miles; and this will bring us to within two miles of the confluence of the old Coosy with the Ganges." *

Mr. Wilford, in support of his opinion, that Palibothra stood "near the confluence of the old Coosy with the Ganges," on a site near the spot where Rajamahal now stands, gives the distance, mentioned by Strabo, from Palibothra to the sea; and the distances, given by Ptolemy, from Palibothra to several towns situated on the banks of the Ganges, above and below it. It is not necessary to follow him through this part of his observations: they contain, however, many things deserving the attention of the curious.

Robertson supposes Palibothra, or Patali-putra, to have stood at or near to the present Allahabad; but, at the time he wrote, he did not possess the great body of information concerning India that has been since obtained.†

The question then, where Palibothra stood, seems now to be brought to this issue, either to adopt the opinions of Jones and Rennell, that it was at Patna, or the opinion of Wilford, that it was at Rajamahal; but it is proved beyond all doubt, that, besides Palibothra, there were anciently other immense cities in those parts of India.

* On the Chronology of the Hindūs, As. Res. vol. v. p. 269, et seq.
† See Disq. on Ancient India, Note xiv. p. 307. (8vo. edit.)

Note B.

(Referred to, vol. i. pp. 270, 272, and p. 320, of this volume.)

On the Origin of Casts in India; together with an Account of the different Classes of Brahmins, and their respective Pursuits.

The division into four distinct casts or tribes, of a people so numerous as the Hindūs, and diffused over so large a portion of the globe, together with the invariable duration of that institution through a series of so many ages, is perhaps one of the most extraordinary circumstances to be found in the history of social order; especially when the humble state of the fourth class, or great body of the people, is considered.

The Hindū tradition concerning the origin of casts is, that, on the creation of human beings, the Brahmins proceeded from the mouth of Brahma; the Cshatryas from his arms; the Vaisyas from his thighs; and the Sudras from his feet. To the first was committed the instruction of mankind; to the second, their protection; to the third, the cares of traffic and agriculture; and to the fourth, servitude.

With respect to the privileged cast of Brahmins, when the Hindū institutions existed in their purity, there were four religious orders (Asrama) to one of which every Brah-

min belonged; the two first were obligatory, the other two optional.

I. The Brachmāchari, or those who studied, and occupied themselves with the study of theology. The second book of the Institutes of Menu contains the rules of this order. The principal of these are, residence in the house where they study and are instructed, strict celibacy, and subsisting on alms.

II. The Griharta, or housekeeper. The third, fourth, and fifth books of Menu comprise rules for his observance, and the means by which he may lawfully gain a subsistence.

III. The Vanaprastha, or hermit, having no house or fixed habitation, but living in woods, and generally retired from the usual haunts of man.

IV. The Yati, or Yoghi, who devotes himself to penances and the performance of extraordinary vows.

The Griharta, or Brahmin-householder, is directed to derive a subsistence from sacrificing and teaching; and to employ his time in study. Hence there is a great variety of appellations for the various sub-divisions of such employments; as, 1st, Guru, a spiritual preceptor;—2d, Acharya, a teacher of the Vedas;—3d, Upadhyaya, a teacher of a particular part of it;—4th, Ritvij, an officiating priest;—5th, Purochita, a family priest to a king, or man of rank;—6th, Yajya, one who gains a subsistence by performing sacrifices for individuals;—7th, Grama Yajyaca, a priest hired by the inhabitants of a village to perform religious rites;—8th, Devalaca, a priest who has the charge of a temple. The three last offices are considered to be mean, and are never held by men of learning or family. Besides the above appellations, there are innumerable others, derived from the particular studies to which individuals

have devoted themselves; as, Srotriya, one skilled in the Vesta;—Smarta, learned in the law;—Jyautisha, an astrologer, &c. &c.

Brahmins exercising these functions, and distinguished by these appellations, are found over every part of India at this day. But, exclusive of the occupations assigned by Menu to the sacerdotal class, multitudes of Brahmins are now found in the army and engaged in commerce. This deviation is not the consequence of distinctions among them, but the result of the general license granted by Menu, *in times of distress*, to seek a subsistence by the duties of inferior classes, when it cannot be procured by their own. The permission and its restrictions are contained in the tenth book of the Institutes of Menu. The whole period that has elapsed since the conquest of India, by the Mohammedans, is considered by Hindū casuists as a time of distress; and individuals have sought a subsistence, or fortune, by professions from which they were originally excluded. In a country where every man pursues the profession of his father, this naturally led to certain families of Brahmins becoming, in their occupations and pursuits, entirely secular, though this circumstance does not at all detract from the respect they personally require from the inferior classes, or exempt them from restrictions in regard to diet, from mixing with other tribes, or from the observance of other rules originally prescribed to their class.

Note C.

(Referred to, vol. i. p. 301.)

Historical Sketch of the Mahrattas.

The first person upon record, who distinguished himself as chief of the Mahratta nation, and who may be considered as the founder of their empire, was Seeva, or Seeva-jee, who began to flourish so lately as about the middle of the 17th century. His great grandfather, Bhaugah Booslah, is said to have been an illegitimate son of Rana Bheem, sovereign of the Rajahpoot State of Oudiapoor, and of the most ancient race of Hindū princes. Booslah finding himself, on account of the illegitimacy of his birth and the obscure origin of his mother, of no consideration at Oudiapoor, went into Candeish, where, after having acquired considerable wealth and reputation in the service of a Rajah of that province, he quitted it, and purchased a tract of land near to the city of Poonah. Booslah left a son, named Maulo-jee, who, after the death of his father, entered into the service of a chief, named Jaddoo Roy. His son, named Shah-jee, married the only daughter of Jaddoo. From that marriage was born Seevajee, in the year 1628. In consequence of a dispute between Jaddoo Roy and his son-in-law Shah-jee, the latter, quitting him, entered into the service of the King of Beejapoor, who gave him the command of 10,000 horse, and, as is frequently practised in India, a Jagheer for the

charge of maintaining them. Shah-jee married a second wife, named Toka Bee, by whom he had a son, named Eko-jee, who was afterwards Rajah of Tanjore. Shah-jee was killed, in 1667, by a fall from his horse in hunting, and was succeeded by his son, Seeva-jee. The King of Beejapour dying, Seeva-jee, taking advantage of feuds that then prevailed, resolved to make himself independent; he accordingly took arms, and, having made himself master of several important places, they were afterwards, together with their territories, ceded to him by his late master's widow, who exercised the office of Regent.* Seeva-jee established his chief residence at Sattarah, about fifty miles from Poonah. Having declared hostility to the Mohammedans, numerous Hindūs resorted to his standard. Aurengzebe, unable to subdue him, and finding some of his finest provinces constantly exposed to his incursions, entered into an accommodation with him, by which the Mahrattas pretend, that he consented to their having a certain part of the clear revenue of the Deckhan, which has been denominated *Choute.* This real or pretended arrangement, furnished them with a pretext for invading the territories of the different princes and viceroys of the southern provinces of the empire, in order to levy what was claimed by them.

Seeva-jee, who had taken the title of Rajah of Satarah, dying in the year 1680, left the extensive territories he had acquired to his son Samba-jee. In 1689, Samba-jee was assassinated, and, it is alleged, at the instigation of Aurengzebe, with whom war had been renewed. He was succeeded by his son Saho-jee, or, as named by some, Rajah

* Tavernier mentions his having seen this Queen-Regent.

Sahou, who, as he advanced in life becoming infirm and indolent, delegated to his minister, Balla-jee Bishwanaut, a Brahmin, born at Gokum, the cares of government and the entire exercise of his power, with the title of Mookhperdhaun, or chief civil magistrate.*

Rajah Sahou, or Saho-jee, died without issue in 1740, after a reign of fifty years, leaving nephews by his brother. The wisdom of the administration of Balla-jee Bishwanaut, during the time he had enjoyed the office of Mookh, or Peishwah, had gained him the love and confidence of the people and army; but the sentiments of gratitude and loyalty were absorbed by ambition to rule.—He made use of the influence he had acquired under his benefactor, so firmly to establish his power, that he not only retained the high office of Peishwah during his life, but transmitted it to his posterity, and this form of government has subsisted ever since. On the death of a Peishwah, his son, or in failure of a son, his next male relation, succeeds to his title and authority.

Saho-jee, during the latter years of his life, having shut himself up in the fortress of Sattarah, was never seen by the public; and the Mahrattas, forgetting his rights with his person, looked up to and obeyed his vicegerent only. The mean capacity of his successor, Ram Rajah, was another favourable circumstance for consolidating the power of Bishwanaut, who, on his decease, was succeeded in the full enjoyment of the authority he had exercised by his son, Bajee-Rao. At that time Rago-jee

---

* *The Persian word Peishwah, responding to Mookh, is generally employed in speaking of this office, but Mookh only is engraved on the seal of the person who holds this office.*—Marquis of Wellesley's History of the Mahratta War, Appendix, p. 5.

Booslah, of the family of Seeva-jee, was Buckshi, or chief commander of the Sátarah troops, and held the province of Berar as a Jagheer. Discontented at the usurpations of the Peishwah, he retired to Berar, which he retained under his own dominion, acknowledging, however, the Satarah Rajah as his liege lord and chief.

The descendants of Seeva-jee still exist, and reside in the fortress of Satarah; where, though in fact prisoners, the eldest in succession is nominally considered as sovereign of the Mahratta nation. The Peishwah, on succeeding to that office, receives a dress of honour from him; before he takes the field in person he goes to Satarah, to have an audience of leave from him, and the country, to a certain extent round Satarah, is secure against all military exactions, and held in respect.

All negociations, on the part of the Mahratta nation, generally considered, are carried on, and the treaties that may result from them concluded, by the Peishwah only; they are held to be obligatory upon all Mahratta chieftains and feudatories, even though not consulted in regard to them, as being made in the name of the supreme head of the state, the Peishwah apparently acting by his authority. But several of those chiefs, in consequence of the weakness of the Peishwah's government, for some time past, and of the frequent contentions, which have arisen among the members of the family itself, are in fact become independent, although they still continue to acknowledge the Peishwah as the executive minister of state.

"They possess no acknowledged right, however, to conclude separate engagements with foreign states, unless the tacit permission to make conquests* should be thought

* "When the province of Malwa was assigned to Holkar and Scindiah, for the payment of their troops, it was stipulated, that of the

to confer that right; but even in this case it must also be inferred, that they have not the right to conclude engagements affecting the Peishwah's supremacy. They are bound to pay allegiance to the Peishwah, and are to every intent officers and subjects of the Mahratta state, of which the Peishwah is the supreme executive authority."*

The principal chiefs of the Mahratta nation, are,

1. The Peishwah, whose capital and place of residence is the city of Poonah.

2. The Holkar family, whose capital is Indore, a city of Malwa.

3. The Scindiah family, whose capital, we believe, is now Oujein. The late Madha-jee Scindiah, who died at the beginning of 1794, extended his territories over a great part of the northern provinces of Hindūstān, got possession of Dehly and the person of the Mogul Emperor, in whose name he affected to act as first minister. He was succeeded by his nephew, Dowlat Row Scindiah, whom he had adopted as his son.

4. The Rajah of Berar, who does not indeed possess so great a military force as Scindiah had, though his government is more solidly established, and his person more respected. The province of Berar, as has been observed, formed part of the dominions of the Rajah of Satarah. Rago-jee Boosolah, the first Rajah of Berar, and from whom the present Rajah is descended, was of the Satarah family; and, though he has acted with the Peishwah

---

conquests which they might atchieve, one portion should belong to the Peishwah, and another portion to Holkar and Scindiah respectively."—*Note of the Marquis of Wellesley—History of the Mahratta War*, Appendix, p. 9.

* Marquis of Wellesley, ibid.

on many occasions, yet we do not believe that he ever acknowledged himself to be subordinate to him, or obliged to enter into his plans.

Besides these four principal chiefs, there are several other Rajahs of inferior note.*

Before the Mahrattas, like some of the other Indian powers, began to entertain Europeans in their service, and adopt and imitate the European discipline and tactics, the strength of a Mahratta army consisted almost entirely of cavalry. Both horse and rider were inured to fatigue. Great bodies of cavalry have been known to march at the rate of fifty and sixty miles a day for some days successively. Some parts of the Mahratta countries abound with horses, and produce a breed, much esteemed, called the Bheemerteddy horse; but the common Mahratta war-horse is a large-boned ill-looking animal. The only weapon used by horsemen is a sabre, in the choice of which they are very curious and intelligent. They learn the use of it, and dexterity in the management of the horse, from their infancy. Their dress, in war, consists of a quilted jacket of cotton cloth, which is perhaps a better defence against cuts of the sword than any other light military dress; under it is a vest of linen, made to fit close to the body, and cross over the breast. The jacket is taken off when its warmth proves inconvenient. A pair of pantaloons, fastened round the middle, over the end of the vest, descends to the ankles. On the head a broad turban is worn, which descending behind, and on each side of the head, nearly as low as the top of the shoulder, defends the head and neck both from the heat of the sun and from the

---

* For an account of them see the Marquis of Wellesley's History of the Mahratta War, Appendix, p. 27, et seq.

sword of the enemy. Food for the rider and his horse, to be had recourse to in case of emergency, is contained in a small bag tied tight upon the saddle. That for the rider consists in a few cakes, a small quantity of rice or flour, and some salt and spices: that of the horse, of a kind of black peas called *gram*, and balls made of the meal of those peas mixed with *ghee** and some hot herbs or spices. Those balls are given by way of cordial, to restore the vigour of the horse after extraordinary fatigue, and it is said that a small quantity of *bang* is sometimes added, a drug which, if taken moderately, exhilarates the spirits; but, if taken in large quantities, it produces a sort of furious intoxication. Tents, except a few for some of the principal officers, were rarely used. Their irruptions were frequently so sudden, and so rapidly executed, that the first intelligence of their hostile intentions was their appearance in the territories they designed to invade. In consequence of their frequent wars, there are few countries in Hindūstān which are not perfectly known to them. Detached parties precede the main army; others scour the country on either flank, and the provisions they can collect are driven towards the spot where the main army is to halt. As hay is scarcely ever made in the southern parts of India, the horses are accustomed to eat grass dug up by the roots, which afford a considerable degree of nourishment, and correct the purgative quality of the blade. The rider having first provided for his horse, goes to his own temperate meal, which having finished, he lies down perfectly contented by his side, and on the first stroke of the *nagar*, or great drum, instantly mounts him again.

* A sort of clarified butter.

The Mahrattas relate strange accounts of the extraordinary sagacity of their horses; and indeed, from their being constantly with their riders, who are fond of caressing and talking to them, they acquire the intelligence and docility of small domestic animals.

If the intention of the Mahrattas in invading a country, be to resent some injury, force its sovereign to pay the *choute*, or comply with any other demand, their devastations are then terrible: they drive off the cattle, destroy the harvest, pillage and burn the villages, and maim and cut down all who may resist their requisitions, or attempt to conceal their effects. On the report of their approach, the frightened inhabitants fly for refuge to the hills, to the woods, and under the walls of fortified towns. The rapidity of their motions leaves but little chance of bringing them to a general action; and the mischief done by their incursions, has frequently induced the party menaced or attacked by them, to obtain peace or procure their departure by complying with their demands.

Such were their armies and mode of warfare, previous to the introduction of foreign innovations. Such were they under Seeva-jee and other leaders, and when they obliged Aurengzebe himself to enter into arrangements with them.

To conclude:—In referring to those times, and even to the epoch when the author left India, he may perhaps be authorised to repeat what he has said in another place. "If we only view the Mahrattas as engaged in warfare, they must necessarily sometimes appear as the most cruel of barbarians; but if we enter their country as travellers, and consider them in a state of peaceful society, we find them strictly adhering to the principles of their religion; in harmony among themselves, and ready to receive and

assist the stranger. The excesses they commit, therefore, cannot fairly be ascribed to a natural ferocity of character, but perhaps may be dictated by policy, or inspired by revenge: they may sometimes wish to obtain that by the dread of their invasions, which otherwise would only be effected by a tedious war; or sometimes to be provoked to retaliate on the Mohammedans the cruelties they have long exercised upon their countrymen."*

Anquetil, in his preliminary discourse to the *Zenda-Avesta*, says:

"The country of the Mahrattas is generally an open country.† The people are cheerful, strong, and healthy, and reckon for their security on their courage and their arms. Their principal force is in their cavalry. Hospitality is their ruling virtue. Their country appeared to me, that of nature—I fancied myself, when speaking with the Mahrattas, to be conversing with men of the first ages of the world."

NOTE D.

(Referred to, vol. ii. p. 83.)

Additional Remarks on the Astronomy of the Hindūs by M. Delambre.

THE preceding observations on the astronomy of the Hindūs having been submitted in manuscript to Mr. Delambre,‡ he was pleased to address the following letter

---

* Sketches of the Hindūs, vol. ii. pp. 307, 308.

† Meaning the parts of it that he had visited.

‡ Mr. Delambre has been long distinguished as an active member

and remarks to the author, which, as throwing further light on this interesting subject, the reader may not be displeased to peruse:—

"Le Mémoire que M. Chevalier m'a transmis de votre part, Monsieur, étoit bien fait pour exciter ma curiosité. Je l'ai lû tout aussitôt et tout entier, et j'ai mis par écrit les réflexions qu'il m'a suggérées. Je suis presque en tout de l'avis de l'auteur. Je pense que les Indiens sont les inventeurs de leur astronomie, car, s'ils ne la tiennent ni des Grecs, ni des Arabes, je ne vois pas bien de quel peuple ils pourroient l'avoir empruntée. Je leur accorde donc sans aucune difficulté toutes les connoissances exposées dans les ouvrages qui nous sont connus par les Mémoires de Calcutta. Mais je ne suis pas pleinement convaincu que l'époque de leurs tables pour l'an 3102 avant notre ère soit réellement fondée sur des observations faites à une époque aussi reculée; je serois charmé que la chose fût vraie, mais quoique je la désire, je ne l'admettrai cependant que sur des preuves plus positives; je ne la rejette pas non plus; je ne demande que la permission de douter et de croire que cette époque a pu être conclue par le calcul, d'après des observations un peu moins anciennes. Mais en quel tems ces observations ont-elles été faites; est-ce dans le 13me siècle de notre ère; est-ce dans l'intervalle? Je n'en sais absolument rien; mais rien n'empêche que ce ne soit dans un tems antérieur à l'école d'Alexandrie. Il est fort à désirer que vos savans compatriotes puissent découvrir et nous faire connoître quelque autre

---

and secretary of the class of Mathematical Sciences, of the *Institute* or Royal Academy at Paris. He was nominated by His Majesty Louis XVIII. one of the Council for superintending and directing education in France instead of the University established by Napoleon Buonaparte.

ouvrage Indien qui contienne avec un certain détail les observations sur lesquelles ont été fondées, et successivement améliorées, les théories qu'ils nous ont déjà expliquées: jusques là il me semble impossible d'assurer que tous les doutes soient levés. Ce vœu sera-t-il jamais réalisé? J'en doute. Ce n'est que dans ces derniers qu'on a publié des recueils d'observations. Les Grecs eux-mêmes ne nous en ont transmis qu'un petit nombre, les Arabes en ont été tout aussi sobres. L'air de mystère que les Egyptiens et les Indiens ont toujours affecté dans tout ce qui regarde l'astronomie, me fait croire que nous n'avons plus rien à apprendre d'eux."

"Agréez l'assurance, &c.

"DELAMBRE."

"Le Mémoire sur* l'Astronomie des Indiens est clair et intéressant; on y trouve un extrait impartial de tout ce qui a été écrit sur cette question, pour ou contre, dans les Mémoires de Calcutta, dans l'Astronomie Indienne de Bailly, dans l'Exposition du Système du Monde par M. le Comte La Place, et enfin par Mr. Playfair dans les Mémoires d'Edimbourg. J'ai toujours pensé, comme l'auteur, que l'astronomie est fort ancienne dans l'Inde; qu'il est peu vraisemblable que les Indiens aient été instruits par les Arabes ou par les Grecs, et moins encore par les Européens plus modernes. J'ai écrit que c'est à eux que nous devons l'arithmétique décimale et les plus anciennes tables de sinus.

"En rendant compte de la traduction Françoise des deux premiers volumes des Mémoires de Calcutta, dans la Connaissance des Tems de 1808, page 442 et suivantes, je disois que dans le 2nd volume Mr. Davis combattoit

---

* Chap. viii. pp. 1—83, of the present volume.

victorieusement l'assertion de Ducham, Bailly, et Le Gentil, qui prétendoient que les Indiens ont, pour calculer les éclipses, des méthodes qu'ils suivent sans y rien entendre; que j'avois revu tous les calculs avec attention, et que leur doctrine, telle qu'elle est exposée par Mr. Davis d'après le Souria-Siddanta, a toute la clarté que comporte la matière; que quelques calculateurs peuvent opérer par routine, mais que les principes n'étoient pas perdus, et qu'ils peuvent être entendus et jugés par tous ceux qui connoissent la langue. Sur la table des sinus, je montrois comment les Indiens les avoient calculés par deux méthodes différentes que je ramenois à nos formules. L'une de ces méthodes est directe; elle est fondée sur des théorèmes qui peuvent donner tous les sinus de 3° 45′ en 3° 45′, mais qui ne peuvent donner que ceux-là. C'est la raison pour laquelle la table Indienne ne contient que 24 sinus. Ces théorèmes étoient également connus des Grecs qui avoient trouvé pour les cordes l'équivalent de ce que nous avons pour les sinus.

"L'autre méthode est encore plus curieuse; elle montre que les Indiens savoient calculer les différences secondes des sinus, connoissance qu'on chercheroit inutilement chez les Grecs, et même chez les modernes jusqu'à Briggs,* qui dans la préface de ses tables trigonométriques, est arrivé au même théorème que les Indiens, et qui comme eux paroit avoir trouvé par le fait la constante de l'expression de la seconde différence. Comme les Indiens, il ignoroit que cette constante est le carré de la corde de l'intervalle suivant lequel procède la table. Pour les Indiens c'est le carré de la corde de l'arc de 3° 45′ ou 0,0042821, ou bien $\frac{1}{233.53}$. Avec ce facteur constant,

* Henry Briggs, Savilian professor of geometry at Oxford. He died there, January, 1630.

qu'il suffit de multiplier par le dernier sinus trouvé, on aura successivement toutes les différences secondes qui serviront à trouver les différences premières, lesquelles à leur tour donneront les sinus. Tout le problême de la construction de la table se réduit donc à trouver le premier sinus, qui est aussi la première des différences premières; pour celà j'indique un procédé rigoureux que je compare à celui de l'auteur Indien, lequel se trouve d'une exactitude suffisante. Je construis donc la table toute entière, et je montre qu'elle est parfaitement d'accord avec la table Indienne.

" Au lieu du diviseur 233.53, il paroit que Mr. Davis a par mégarde écrit 255, qui est le premier sinus et la première des premières différences. Cette faute de copie m'avoit d'abord empêché de sentir la justesse et le mérite de la méthode.

" Quand je trouvai cette méthode pour calculer nos tables de sinus pour la division décimale du cercle, j'ignorois qu'elle eut été mise en pratique par les Indiens plusieurs siècles auparavant; mais je l'ai présentée d'une manière plus claire et plus rigoureuse.

" Leur théorie pour calculer les tables d'équation du centre, étoit incomplète et inéxacte. Quoiqu'ils se servissent d'épicycles, ainsi que les Grecs, ce calcul étoit chez eux moins géométrique et moins juste que celui de Ptolomée. De 90° à 180° ils faisoient revenir en ordre inverse les équations des 90 premiers dégrés. A cet égard les Grecs étoient plus avancés que les Hindous; leur trigonométrie étoit moins incomplète, quoique celle des Hindous ressemble plus à la nôtre. On voit que les Hindous savoient que les différences premières de l'équation sont proportionnelles au sinus de l'anomalie, ou ce qui revient à peu-près au même, que les différences premières des sinus sont comme les cosinus.

" Quant à l'antiquité du Souria-Siddanta, je ne me permettois pas d'avoir un avis. Un savant Anglais, qui lui avoit d'abord donné 3840 ans d'antiquité, a depuis reconnu qu'il devoit être de l'an 1268 de notre ère.

" A ne considérer que la forme des tables, leurs idées sur la précession des équinoxes, leur obliquité et leur théorie des éclipses, on croiroit les auteurs des livres Hindous plus anciens que l'école d'Alexandrie. D'un autre côté, en leur voyant des connoissances qu'on ne trouve pas chez les Grecs, on seroit tenté de les croire plus modernes. Tout ce qu'ils ont de commun, c'est le systême des épicycles pour les planètes, mais moins parfait que celui des Grecs; d'où l'on pourroit conjecturer que la doctrine des Indiens a passé en Grèce, où elle s'est étendue et perfectionnée: il paroit moins naturel de penser que les Hindous aient reçu des Grecs, par l'entremise des Arabes, des théories qu'on ne trouve chez eux qu'incomplètes et défigurées.

" Telle est en substance mon opinion, telle que je la publiais en Mai, 1806. Ce que j'ai lû depuis sur la même question, n'a pas levé mes doutes.

" Mr. La Place, qui avoit quelque intérêt à soutenir la grande ancienneté de l'astronomie Indienne, et qui avoit d'abord parlé des mouvemens moyens et des époques des Hindous de la manière la plus avantageuse, a fini pourtant comme le savant Anglais par croire et imprimer que leurs tables ne remontent pas au-delà du 13me siècle. Mr. Playfair, en répondant à l'objection de Mr. de La Place, ne la détruit pas. Peu importe que Bailly ait affirmé plus ou moins directement et positivement la conjonction générale des planètes, qui a déterminé l'époque; ce qu'il falloit éclaircir est un fait. Les tables indiquent-elles en effet cette conjonction, l'époque alors est fictive, et l'astronomie Indienne est beaucoup plus moderne. Les

tables n'indiquent-elles pas cette conjonction, alors l'objection de M. de La Place tombe d'elle-même. C'est ce que ne dit pas Mr. Playfair, et c'est ce que je n'ai pas le tems de vérifier. Mais quand même l'objection seroit sans force, il resteroit bien d'autres difficultés. Ce ne sont pas quelques rencontres heureuses parmi une foule de calculs erronés ou incohérens, qui suffiroient pour prouver l'antiquité de l'astronomie Indienne. La forme mystérieuse de leurs tables et de leurs méthodes, suffiroit pour donner des soupçons sur leur véracité. C'est une question qui probablement ne sera jamais décidée, et qui ne pourroit l'être que par de nouvelles découvertes dans les écrits des Hindous, et par un traité beaucoup plus gros et moins amusant que celui de Bailly. Tout ce qu'on peut dire pour le présent, a été dit ou peu s'en faut. L'auteur du mémoire l'a présenté avec beaucoup de lucidité, d'intérêt et de fidélité. La lecture de son écrit est attachante; j'en dis autant des notes, où j'ai trouvé des détails curieux sur le calendrier et sur les monumens des Hindous."

"DELAMBRE."

Paris, 21 *Juillet*, 1814.

NOTE E.

(Referred to, p. 132, of this volume.)

On some Practices peculiar to the Hindūs.

IN India, as in other countries, we find practices peculiar to particular places, or certain families; but which being confined to these, must not be confounded with the character, manners, and customs of the people at large, but

ought to be considered as extraneous and apart from these. Particular attention should therefore be had to distinguish what is local or partial from what is general.

In the article of the Asiatic Researches referred to above, it is allowed that some cruel practices which are mentioned, very rarely happen; and when they occur they seem to excite as great horror among the natives as Europeans. One of these is termed *Setting up the Koor.** It consists in erecting a circular pile of wood, on which a cow or an old woman is placed. The reason of chusing a cow, it being a sacred animal, may be understood; but chusing a poor old woman as its substitute, is not so easily comprehended. The intention of the measure is to procure compliance by fear, with what has been refused to entreaty; for if fire be set to the pile, and the woman or cow perish, inevitable mischief, it is supposed, will be the consequence to those, whose refusal to what was required had occasioned the measure to be resorted to. Only one instance of *setting up the Koor* had ever come to the knowledge of the author of the article. It happened in 1788. Every thing was prepared for execution: an old woman had already mounted the pile, when the European superintendant of the district, being apprized of what was doing, prevented its accomplishment. But the old lady, who had been thus rescued from death, so far from complaining of what had been done, peremptorily refused to appear to give evidence against the offender, threatening to destroy herself should any compulsion be used to make her do so.

Nothing certainly can be more monstrous than this and some other practices which are mentioned, or more absurd

---

* See Asiatic Researches, vol. iv. p. 357, et seq.

than their pretended effects; but in opposition to these, let us place the scandalous excesses that were produced in our own country, even not many years ago, by the belief in witchcraft, and the notion that still prevails in the Highlands of Scotland, of certain persons, and even whole families, possessing hereditarily what is termed *Second Sight*, meaning, the power of looking into futurity, and of knowing events happening at the instant, at places the most remote from them. It is a practice but too frequent among travellers, to form a judgment respecting the characters of nations from partial circumstances, or things with which they occasionally meet. Those who are better informed, may smile at their conclusions, but the majority of readers are exposed to be led into error by them. Though in the works of some of the early travellers and missionaries in India much curious information is to be found, yet we see almost all of them persuaded that the Brahmins practised magic, and that many of the jugglers' tricks were supernatural, and performed by infernal aid.

That the Brahmin should sometimes artfully make use of his inviolability for purposes of self-interest, may easily be supposed; and we agree with the author of the article in the Researches above quoted, that this may probably have given rise to what is called the *Dherna*, though it is now practised by others as well as Brahmins. The Dherna in respect to its intention is similar to the Koor. To obtain what is wanted, the claimant sits down before the door of the debtor, and, armed with a poniard, or having poison in his hand, threatens to destroy himself should any one attempt to enter or go out of the house; the fear of causing the death of the claimant, and especially of a Brahmin, effectually deters any one from passing him,

and almost always procures satisfaction to be granted. But the usual way, and especially with persons of other casts, is to sit down and declare their resolution neither to quit the spot, nor to eat or drink, until the demand be complied with.

INDEX.

*** *The Roman numerals refer to the volumes; the Arabic figures, to the pages of each volume.*

A

B.

C.

F.

G.

H.

I.

J.

K.

L.

M.

N.

O.

P.

Q.

R.

S.

T.

U.

V.

W.

Y.

Z.

J. M'Creery, Printer,
Black-Horse-Court, London.

ERRATA.

Vol. i. p. 174, line 21 *note*, *for* procession, *read* precession.
Vol. ii. p. 105, line 16, *for* spaces, *read* paces.
p. 256, line 6, *for* by another, *read* another by.